PAPER TRADE JOURNAL

MARCH 9, 1959

Pulp and Paper Associations Get Big Turnout from Healthy Industry

APPA HIGHLIGHTS . . . Report on European paper and board use . . . Recent developments in papermaking . . . Kraft paper review . . . Education and research stressed

TAPPI HIGHLIGHTS . . . 44th meeting biggest ever . . . New post for Mr. TAPPI . . . Gold Medal Award . . . New president named . . . Galaxy of technical papers

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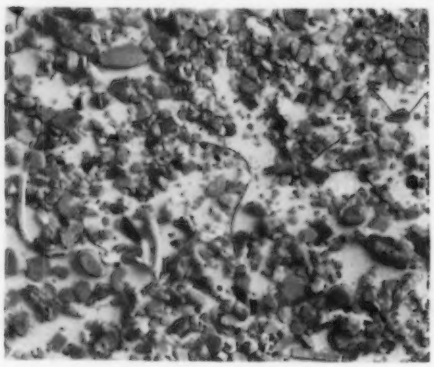

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REMEMBER THESE DATES

March 8-11, National Paper Trade Ass'n., Annual Meeting, Waldorf-Astoria Hotel, N. Y.

June 2-4, American Pulp and Paper Mill Superintendent's Ass'n., National Meeting at the Shamrock Hilton Hotel, Houston, Texas.

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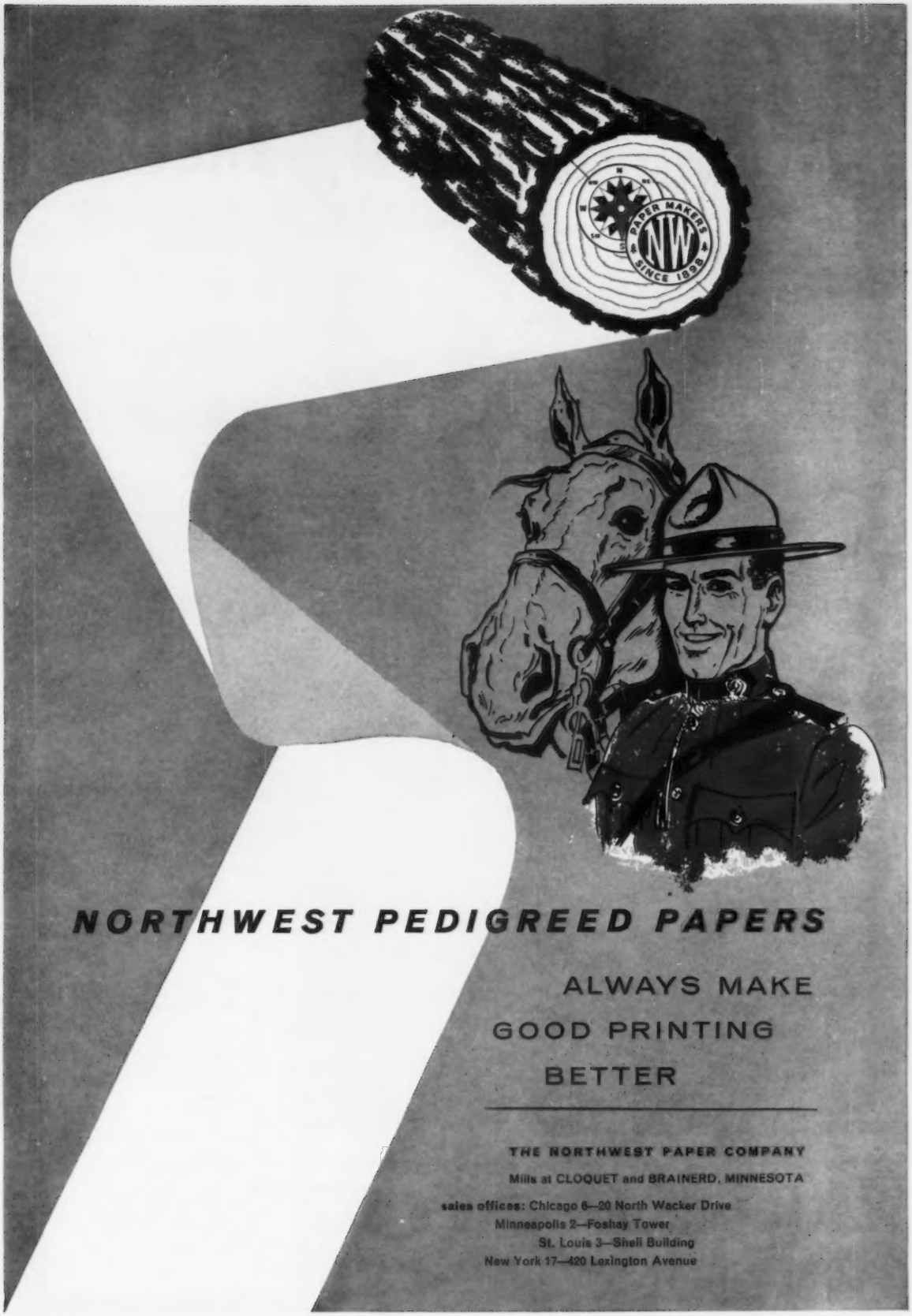
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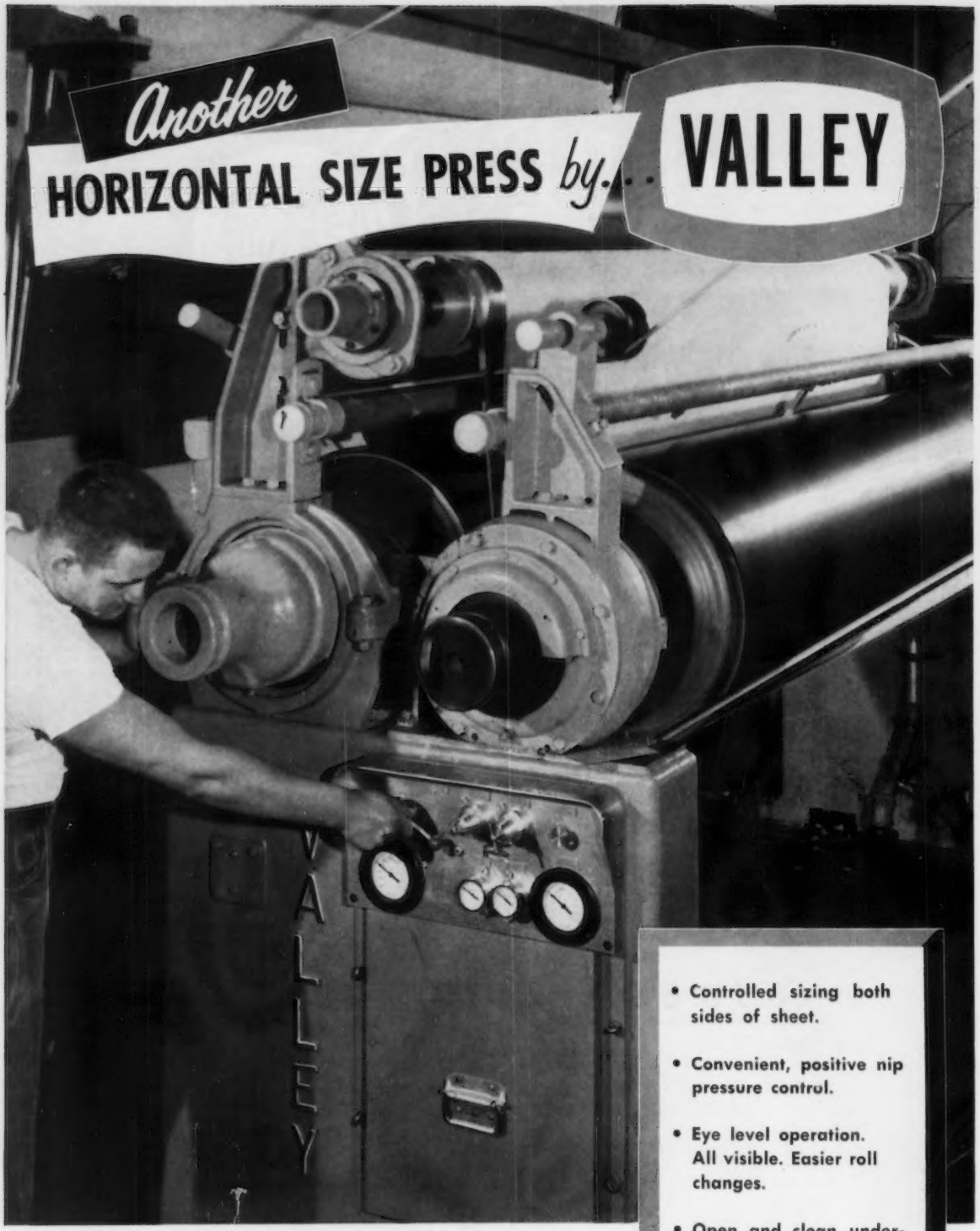

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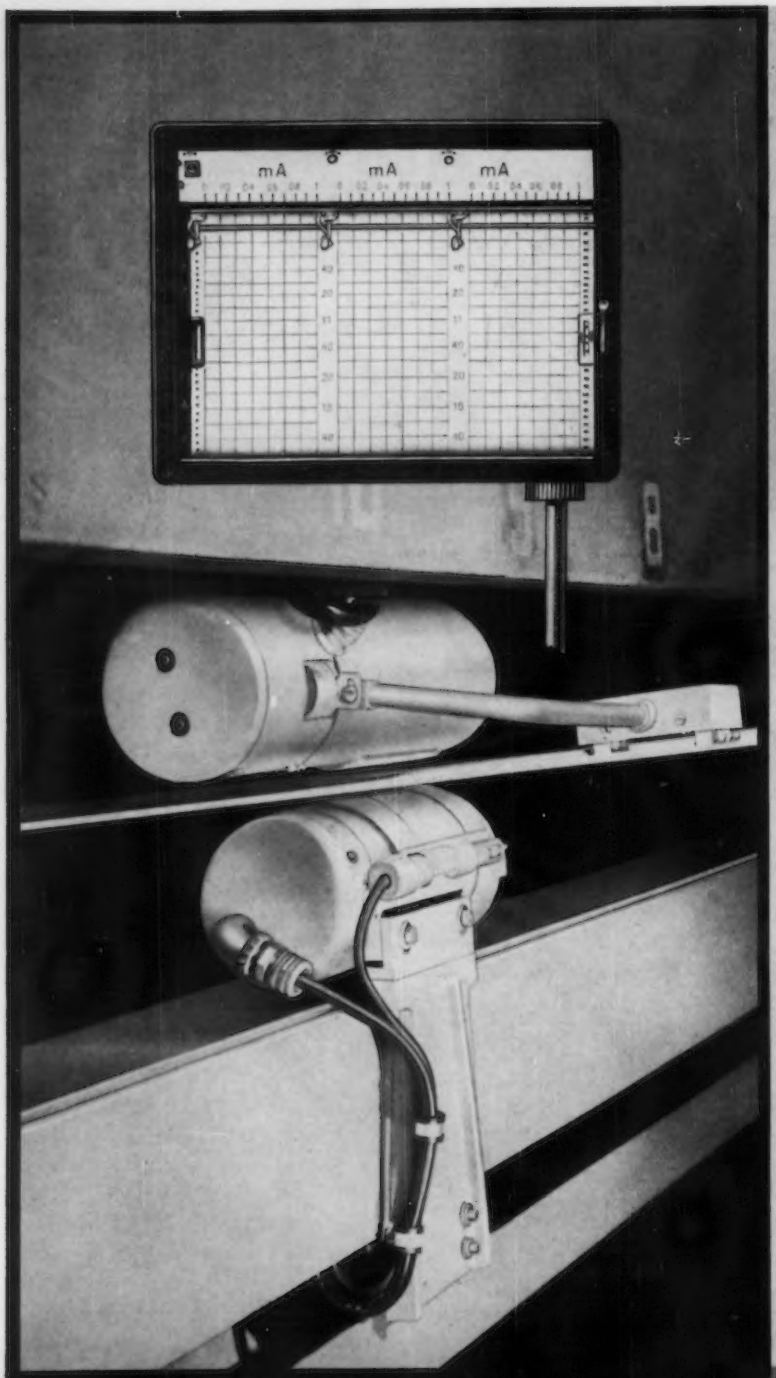

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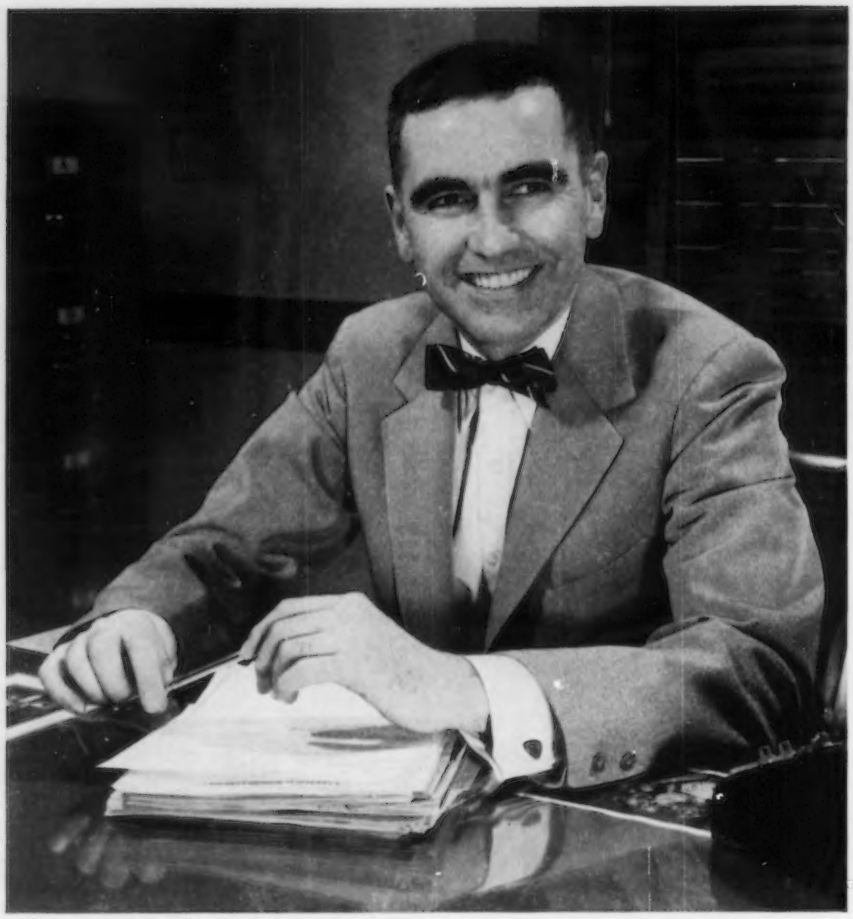

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"We select suppliers whose standard of quality is as high as ours"

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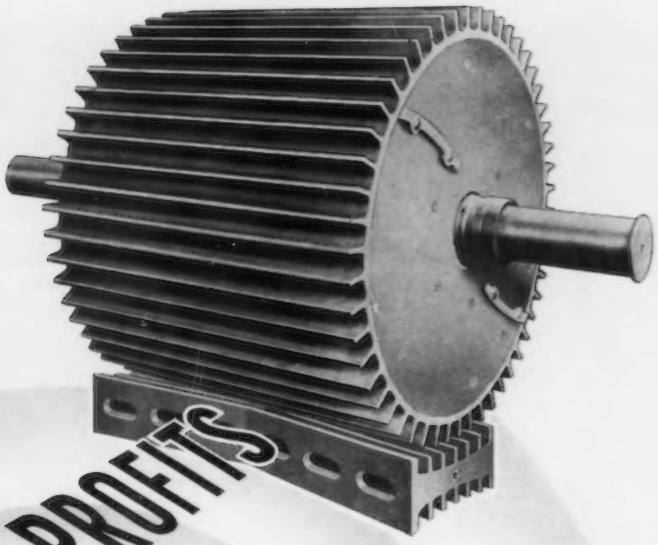

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For information on the full line of Dorr-Oliver equipment and help in its application to your production problem, write to Dorr-Oliver Incorporated, Stamford, Conn.

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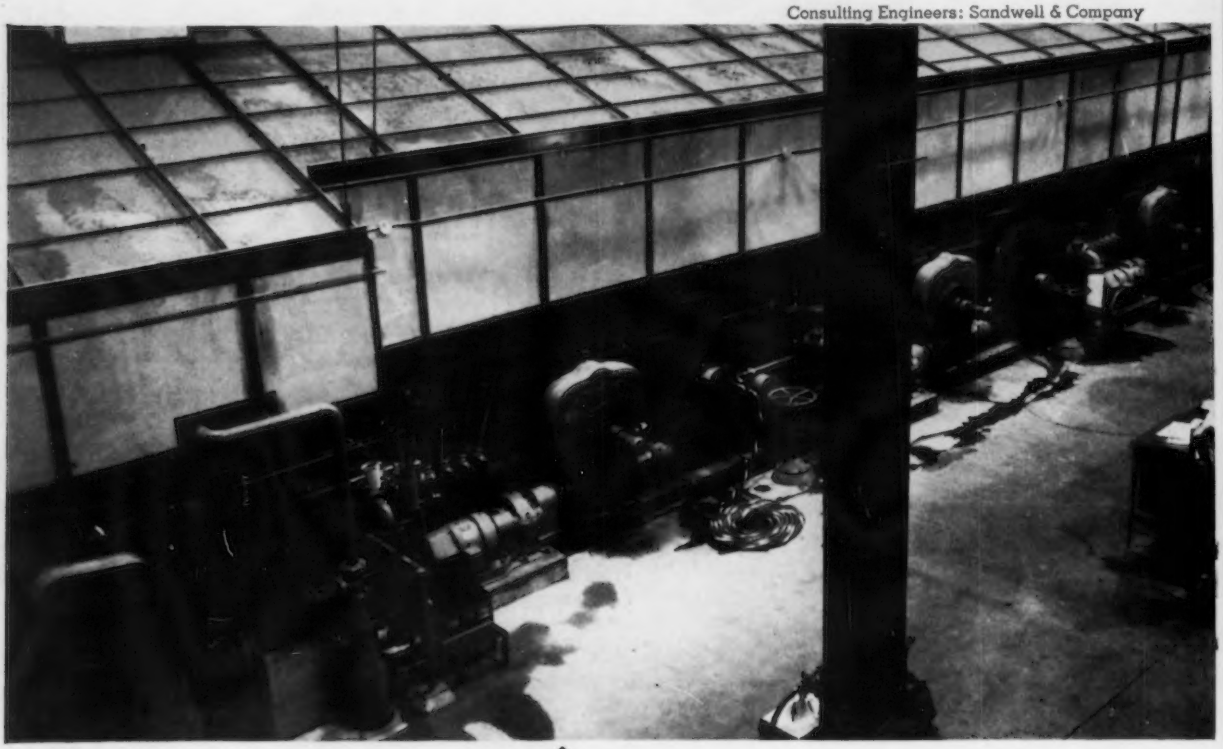

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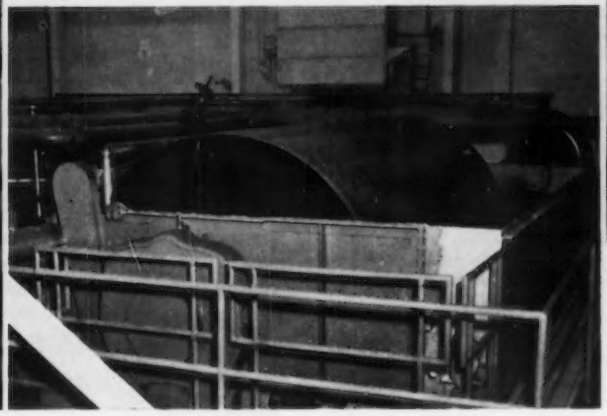

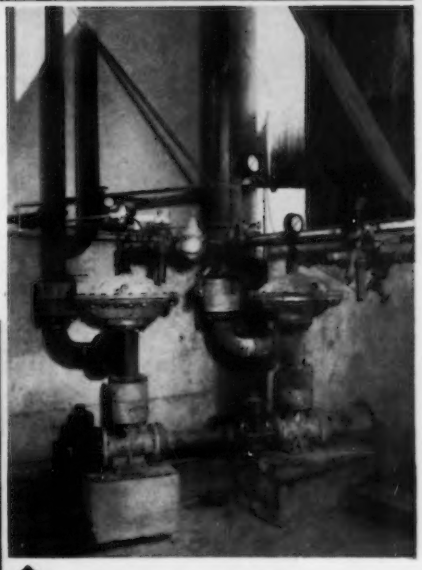

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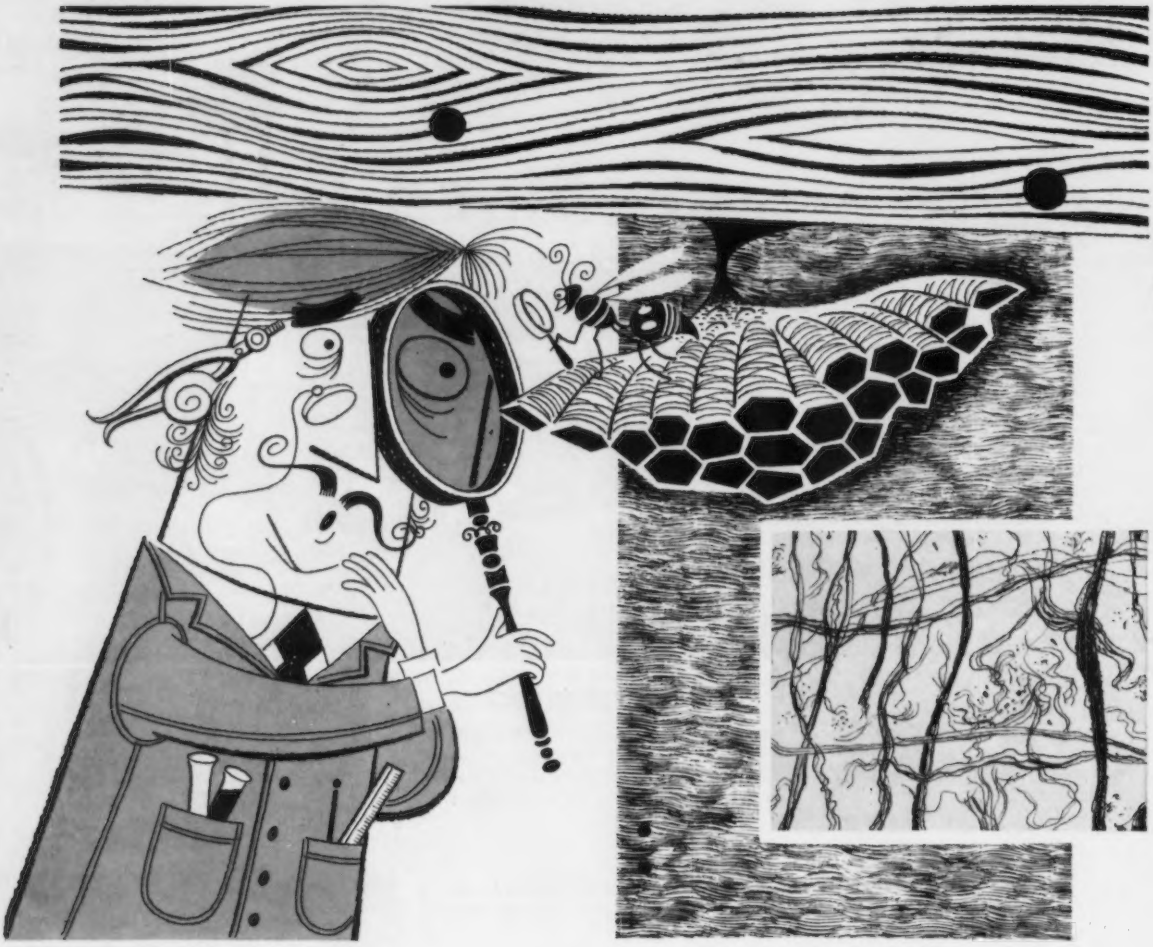
Tales of the Paper Industry: No. 1



How a wasp inspired the idea of using wood to make paper

One day, while closely observing a wasp hard at work on a nest, René Antoine Ferchault de Réaumur, the French naturalist and physicist, decided that the wood filaments used by these insects in nest building could also be used in the process of paper making. Although, Réaumur never tested his theory, he remains the first scientist to suggest that paper could be made from wood fibers.

Here, the observations of one man eventually paid off in revolutionary progress for the paper industry. The moral of the story: *the opinion of a qualified person is often invaluable*. So, if you're planning on buying pipe or tubing for paper mill applications, National Tube's trained Mill Service Force may be able to offer you some money-saving advice.

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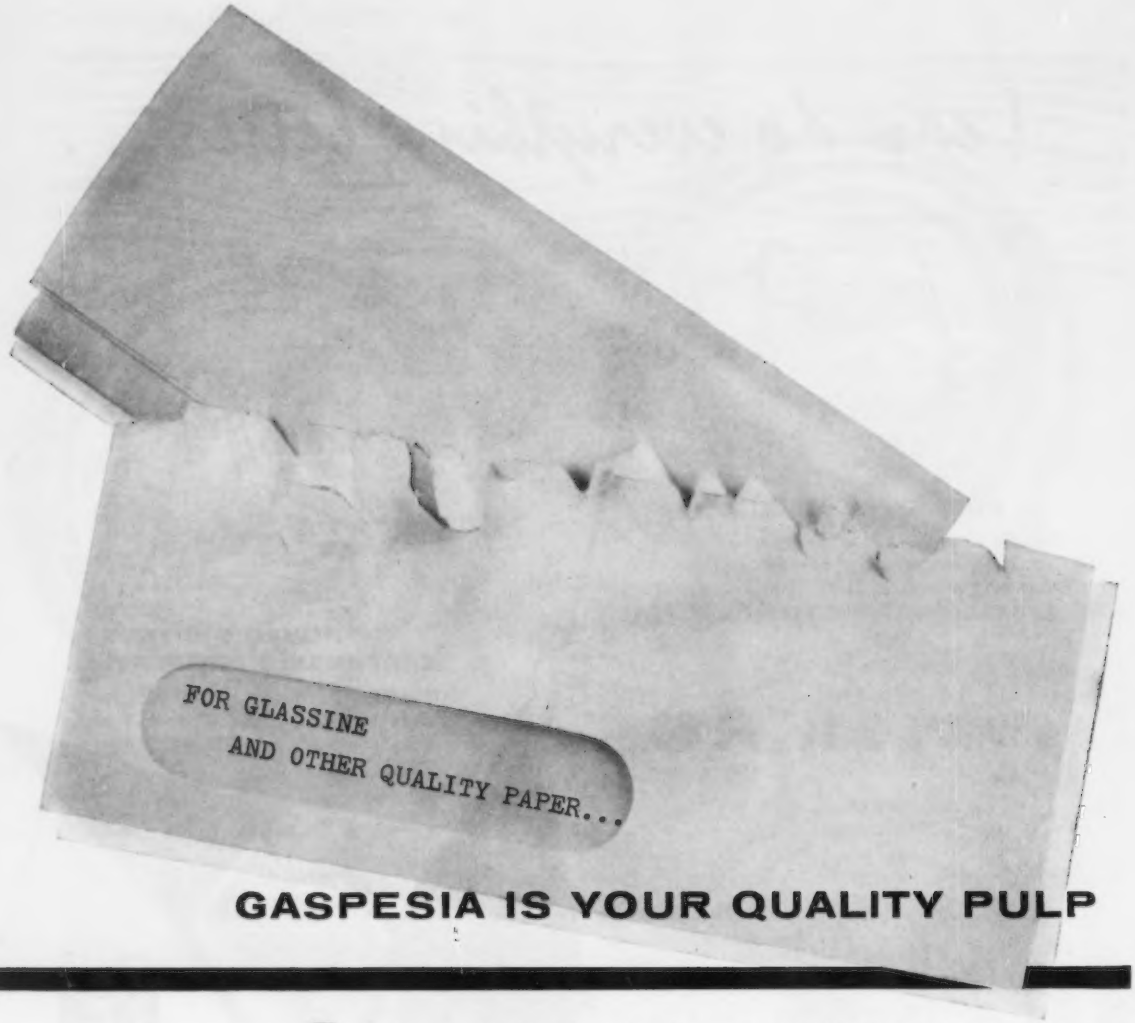

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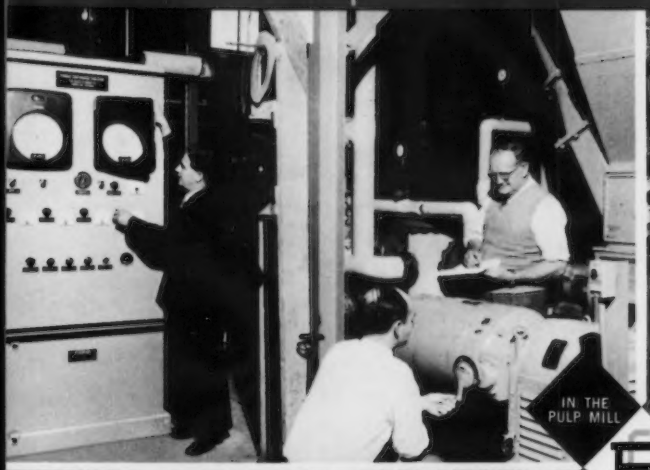

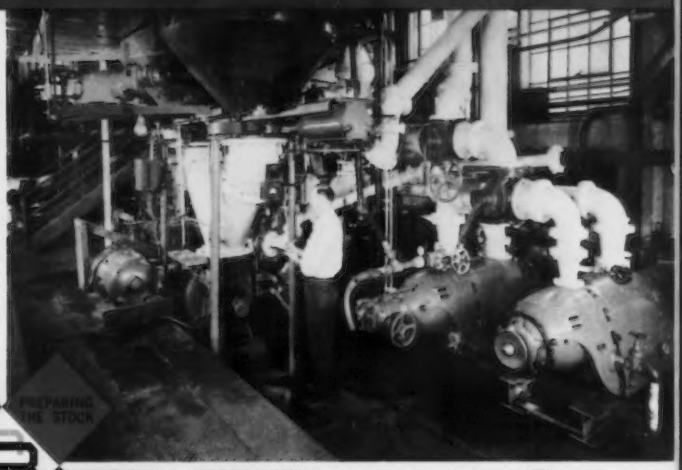

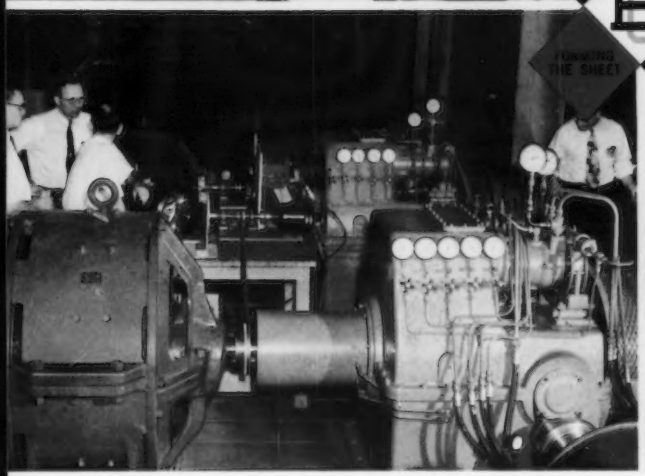

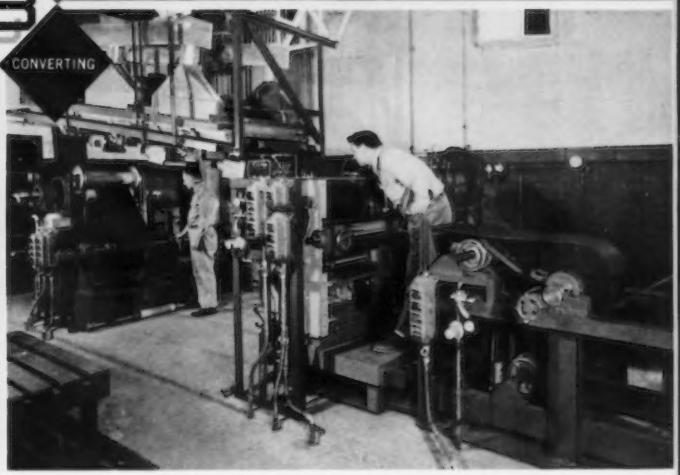

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. . . finding better ways to do the job, through inter-related research

Black-Clawson research and development facilities and brain-power are at work in every phase of pulp and papermaking.

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SHARTLE STOCK PREPARATION EQUIPMENT
PAPER MACHINE PAPER & BOARD MACHINES
DILTS DIVISION CONVERTING MACHINERY

Mother and daughter read the same page . . . and there's no problem of show-through from either side. TITANOX-A-WD—the water-dispersible anatase titanium dioxide white pigment—insures the opacity that makes reading a pleasure.

Look at both sides of the problem

TITANOX-A-WD keeps not only magazine pages but all types of paper stocks opaque without making them heavy. And it increases printing contrast. One more reason why TITANOX* titanium dioxide pigments—both anatase and rutile, especially TITANOX-RA-50—are No. 1 choice among papermakers. Titanium Pigment Corporation, 111 Broadway, New York 6, New York; offices and warehouses in principal cities.

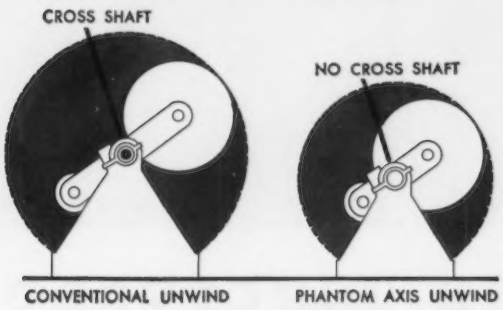
TITANIUM PIGMENT CORPORATION
SUBSIDIARY OF NATIONAL LEAD COMPANY

*TITANOX is a registered trademark for the full line of titanium pigments offered by Titanium Pigment Corporation.

6709

ANNOUNCING... A NEW ADVANCE IN TURRET UNWINDS

EGAN PHANTOM AXIS* TURRET UNWINDS



***ELIMINATION OF CENTER CROSS SHAFT MAKES THE DIFFERENCE— GREATER ROLL DIAMETERS, MORE COMPACT DESIGN, FAR LESS HEIGHT AND FLOOR SPACE**

FEATURES

Pneumatic constant tension system (optional)

Compact design means more rigidity; better operation at high speeds

Speeds in excess of 1000 fpm

Flying splices at full machine speed

Provision for splicing with either inside or outside of web up (optional)

Knife cut-off

Power rotation of turret

Automatic or manual side shifting

Air chucking of cores or shafts (optional)

Web widths through 120″

Write, or phone Randolph 2-0200, for illustrated technical data giving complete information on the new Phantom Axis Turret Unwind Series, and its companion unit, The Egan Phantom Axis Turret Winder.

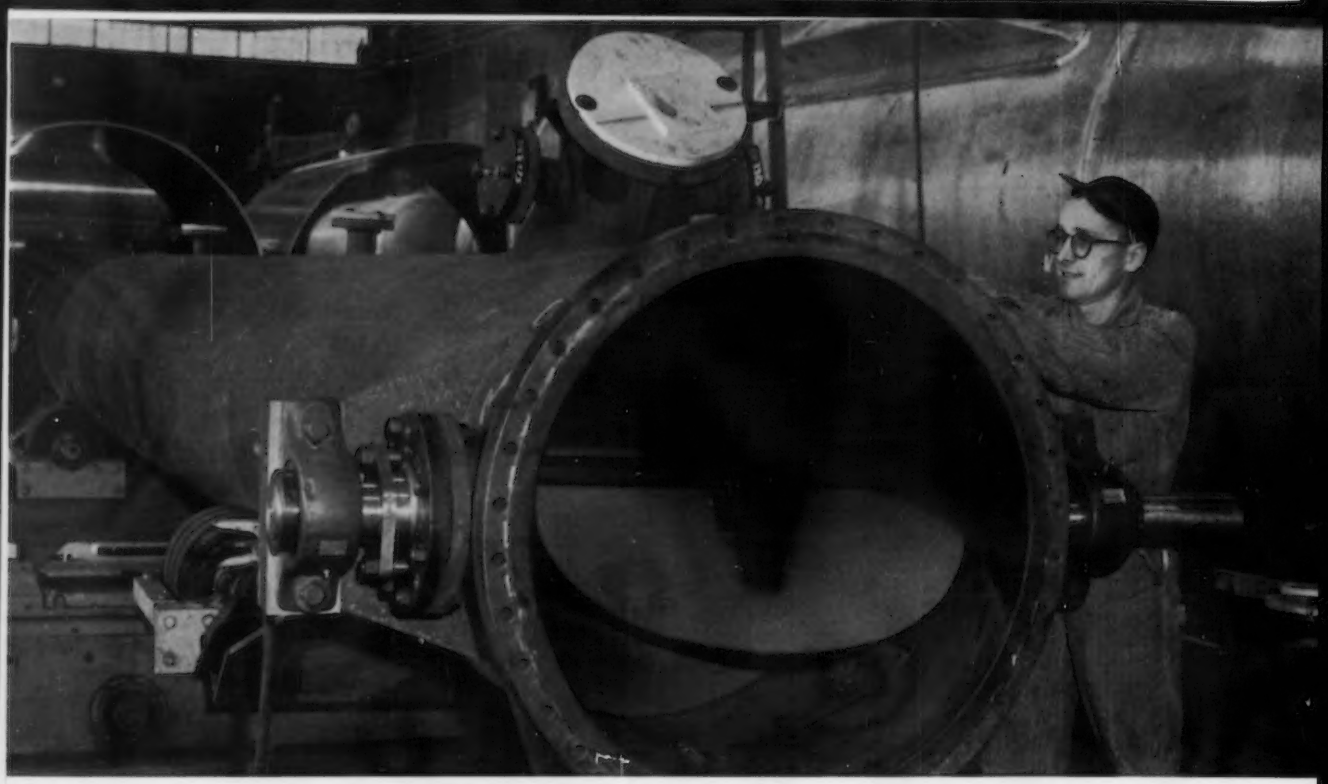
Egan **FRANK W. EGAN & COMPANY**

SOMERVILLE, NEW JERSEY

CABLE ADDRESS: EGANCO—SOMERVILLE (NJER)

MANUFACTURERS OF PAPER CONVERTING MACHINERY: COATERS, LAMINATORS, TREATERS, GUMMERS, SATURATORS, EMBOSSERS, UNWINDS, WINDERS, DRYING SYSTEMS, AND OTHER COMPONENTS.

REPRESENTATIVES: MEXICO, D.F.–M.H. GOTTFRIED, AVENIDA 16 DE SEPTIEMBRE; JAPAN–CHUGAI BOYEKI CO., TOKYO. **LICENSEES:** GREAT BRITAIN–BONE BROS. LTD., WEMBLEY, MIDDLESEX; FRANCE–ACHARD-PICARD, REMY & CIE, 36 RUE D'ENGHIEN X, PARIS; ITALY–EMANUEL & ING. LEO CAMPAGNANO, VIA BORROMEI 1 B/7, MILANO; GERMANY–ER-WE-PA, ERKRATH, BEI DUSSELDORF.



SOMETHING NEW IN DIGESTERS

fabricated from stainless steel to resist corrosion

Among its diversified accomplishments, Bauer Brothers Company, Springfield, Ohio, is noted for its development of processing equipment for the paper industry. Two new continuous digester designs are recent contributions. And, Graver's superb skills with alloys were selected to assure that the unique and exacting fabrication required from corrosion-resistant stainless steel would make the new designs perform to expectations. Graver is admirably situated to fabricate your processing equipment from alloys and steels with the craftsmanship that will assure the performance you require.

Plants and Offices Across America

GRAVER®

GRAVER TANK & MFG. CO.
DIVISION—UNION TANK CAR COMPANY
EAST CHICAGO, IND.

Trends

Board Continues To Lead Paper

Paper mills ran close to 90% of capacity in February (last February was 89.5%) while board mills operated at or near 94% (last February was 86%).

Folding Boxes Off in January

January shipments of folding paper boxes were off 3.6% in dollar volume and 5.3% in tonnage from the same month last year, according to the Folding Paper Box Association of America. Folding box volume totaled $71,300,000, down $3,300,000 from January, 1958. Folding carton shipments aggregated 178,600 tons, off 12,000 tons. Viewing the upcoming months with confidence, the association announced that the dollar value of new orders for folding boxes in January topped the figure of a year ago by 4.3% on increased tonnage of 1.9%.

New Pulp Capacity Needed for 1962

New pulp capacity will be required in this country by late 1962 or early 1963, forecast P. W. Hoguet, president of the Econometric Institute in a speech to the U.S. Pulp Producers Ass'n. Annual Meeting. Mr. Hoguet's report will be published in next week's issue. He also indicated that wood pulp requirements in 1959 are likely to be about 5% higher than in 1958. This will mean almost a 10% increase in production over 1958 because of the shift from inventory liquidation to stability.

Need for Better Drying Methods

"What justification is there, other than our ignorance, for a dryer section of thousands of tons of cast iron to contain a few pounds of paper during the drying process?—Surely there must be a better way" stated K. O. Elderkin during his TAPPI Medal acceptance speech. Certainly much time and effort has been put into search for new and better ways to dry paper in the last few years and this seems to have met with some success.

Not Enough Research Big Paper Industry

None of us are yet paying the attention to research that we should if we are not only to catch up with research progress made in other industries, but keep pace with the research effort in the present economy and the years ahead. This was an important point made by A. B. Layton, president Crown Zellerbach Corp., in his address (beginning on page 58) to the joint APPA—TAPPI Research Forum.

Waste Paper Prices Firm

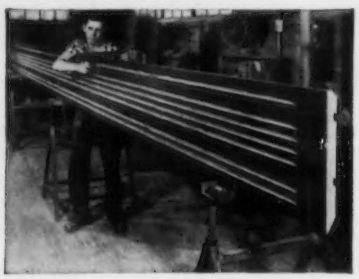
The waste paper market continues active with firm prices. Late in February and early March there were some scattered price rises in the New York area.

REPORT FROM RYERSON
on Services and Products in Stock

In addition to the products shown below, you can call on Ryerson for flame-cut steel shapes, fabricated steel for reinforced concrete or steel frame construction—many other products and services. And equally important are the specialists who carry out the Ryerson quality control program —see that customers specifications are *exactly* met, that every order is correctly filled and promptly delivered. As a result you get unequalled service and certified quality when your company calls Ryerson for steel, aluminum, industrial plastics and machinery.

STAINLESS STEEL—Allegheny stainless in over 2,221 sizes, shapes, types, finishes: sheets, plates, bars, pipe, etc.

INDUSTRIAL PLASTICS—PVC pipe, fittings, sheets and rods, rigid Kralastic and flexible polyethylene pipe.

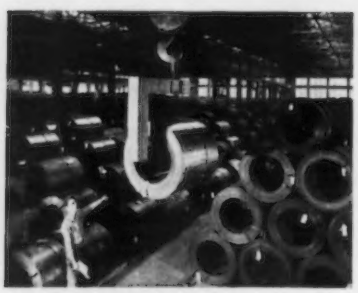


RYERTEX COVERS & BEARINGS
Suction box covers, bearings, etc. of low friction phenolic compositon.

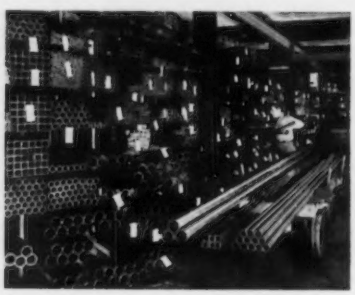
CARBON STEEL & ALLOY BARS
Most complete range of types, shapes and sizes as well as largest tonnage.

STRUCTURALS—I-beams, H-beams, channels, angles, tees and zees—all high quality steel to ASTM spec. A-7.

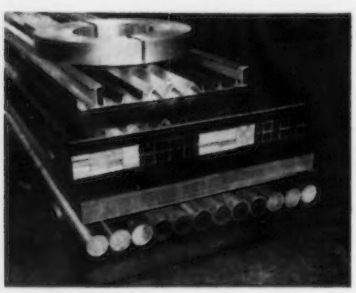
PLATES—14 types including special low carbon steel plates for forming and welding, leaded New E-Z-Cut, etc.



SHEET STEEL & STRIP—More than 20 different types in pattern sizes, cut-to-order sizes, strip coils, etc.



TUBING—Seamless and welded steel tubing—mechanical tubing, fluid line, pump cylinder and structural tubing.



ALUMINUM—At many Ryerson plants —sheets, coils, plates, bars, tubing, architectural and structural shapes, etc.

RYERSON STEEL®

Member of the INLAND® Steel Family

Principal Products: Carbon, alloy and stainless steel—bars, structurals, plates, sheets, tubing—aluminum, industrial plastics, metalworking machinery, etc.

PAPER TRADE JOURNAL

WEEK OF MARCH 9, 1959

New kraft and board mill of Cascade Kraft Corp., Wallula, Wash., which is due to start up late this month. This 150 ton per day mill is a subsidiary of Boise Cascade Corp.

Continental Can Names Daniel To Build Augusta Mill

The Daniel Construction Co. of Greenville, S. C., has been awarded the general contract for construction of Continental Can Co.'s bleached board mill at Augusta, Ga., it was announced by C. B. Stauffacher, executive vice president of Continental's Robert Gair Paper Products Group.

Construction is scheduled to start on or before March 15th of this year, with operations set for the last quarter of 1960. The mill will produce 350 tons per day of bleached paper and board for use in packaging food products. The initial 350-ton capacity will be provided by a 216-inch fourdrinier paper machine.

Designed for step-by-step expansion, the mill is to be located on a 2600 site, on the main line of the Georgia Central Railroad, 11 miles south of Augusta.

Champion Starts-Up Number 20

Champion Paper & Fibre Co. started up its newest paper machine, named Number 20, at Canton, Ohio, late in February. This 230 inch trim Beloit fourdrinier has been built for speeds up to 200 f.p.m. The new machine designed for the manufacture of business papers is equipped with a Ross totally enclosed hood. It will add 200 tons per day to the production of the Canton mill bringing the daily total to 900 tons.

More on West Virginia Expansion

The $50 million expansion at West Virginia Pulp & Paper Co.'s Luke, Md., mill will include two new Beloit paper machines, one for start-up in 1960. Charles T. Main Co. are consulting engineers on the project. The stock preparation systems will be supplied by Emerson Mfg. Co. and will consist of jordans, Claflins, automatic controls, and magnetic separators.

The new machines will produce printing papers, one machine will be equipped to do machine coating.

Strike Closes Riegel Plants

At 10:00 p.m. on Friday, February 27th, certain employees of the Riegel Paper Corp. established picket lines at the company's plants at Milford, Warren Glen, Hughesville and Riegelsville, N. J. Since then they have struck, and by engaging in mass picketing have prevented other employees from entering the plants.

Both the International Union and Local 712 inform the company that they have not authorized or condoned the strike, and that they have urged the strikers to return to work and to submit any grievances they may have to the orderly procedure the contract provides.

It is understood the strikers claim that the company has violated the seniority clause of the contract.

To Expand Ticonderoga Mill

Latest reports indicate that International Paper Co. has just firmed up plans to expand its Ticonderoga, N. Y., mill. The program includes the construction of a new machine room and installation of a new Beloit machine. The Ticonderoga mill currently manufactures offset, decalcomania, text, papeterie and one-time carbonizing papers.

Paper and Board Production

According to the American Paper and Pulp Assn., the ratio of the United States production to mill capacity for the week ending February 21, 1959, was 90.0 per cent compared with 87.6 per cent revised for the preceding week. The ratio was 90.6 per cent for the corresponding week a year ago.

The paperboard production ratio for the week ending February 21, 1959, was 94 per cent compared with 94 per cent for the preceding week and 89 per cent for the corresponding week a year ago.

(Detailed statistics on page 67)

PAPER PEOPLE

Morris Kane

Robert Paris

KVP's New Fundamental Research Group

Morris Kane, technical director for The KVP Co., will be in charge of a new fundamental research group recently formed at the company's Kalamazoo plant, it was announced by Robert D. Caine, vice-president of manufacturing.

Designed to broaden the scope of KVP's product development program, the purpose of this new research group will be to provide solutions to fundamental product development problems and also find practical applications of these solutions through cooperation with pilot laboratory, engineering, and production personnel.

In order to assume certain responsibilities previously held by Mr. Kane, appointment was made of Robert Paris to laboratory administrator from supervisor of the plant's quality control section.

Laboratory staff member Gerald Ritzema has been appointed acting supervisor of the quality control section.

Other department heads in KVP's main laboratory will remain the same: Leo Lake, supervisor of the research group; R. C. Germanson, supervisor of mill technical service; Reginald Hurst, supervisor of customer technical service.

Louis Calder Celebrates 80th Birthday

In celebrating his 80th birthday on March 8, 1959, Louis Calder, well known business leader, sportsman, and philanthropist, still finds as much fascination in the complex daily workings of the pulp and paper industry as he did in his earliest associations with Perkins-Goodwin Co. Mr. Calder on January 22nd of this year celebrated 62 years with Perkins-Goodwin. On January 22, 1897, Louis Calder began working for Perkins-Goodwin as an office boy, later becoming a star salesman, and on January 26, 1922, he was elected president.

Louis Calder's 80th birthday will probably not mark any appreciable lessening of his activities and interests. In addition to his share of the guidance of Perkins-Goodwin, his many other interests, particularly in the field of philanthropy, indicate a continuance of his well-filled days. His directorship of the Southland Paper Mills, his presidency of the Kesbec service station chain, and his ever-widening range of philanthropies in the area of health and education through the Louis Calder Foundation, plus his nationally known reputation as a dedicated sportsman, are all testimonies to his great energy and enduring talents.

Lewis Calder

Gaylord Promotions at Baltimore

Verle B. McCafferty, assistant superintendent of the Gaylord Division of C Z's Baltimore Mill, has been promoted to superintendent of that mill. Paul Besse, chemist and assistant to the superintendent at Baltimore, is now assistant superintendent.

Anderson Appointed VP Of Econometric Institute

Charles R. Anderson, economic and market analyst of Great Northern Paper Co. has been appointed vice president of The Econometric Institute, Inc. This was announced today by Peter W. Hoguet, president of the Institute. Mr. Anderson will assume his duties on March 2, 1959, and replace Benjamin Slatin who recently resigned to join the American Paper and Pulp Association.

Ruberoid Names O'Leary Board Chairman

The board of directors of The Ruberoid Co. has announced that E. J. O'Leary, president and chief executive officer, has been elected chairman of the board of the company. Herbert Abraham, chairman since 1954, has resigned that position but will continue to serve as a director and as chairman of the executive committee.

E. J. O'Leary will continue to serve as president and chief executive in addition to his new position.

Continental Can Names Tarbell Tonawanda Mgr.

Theodore H. Tarbell has been appointed manager of the Continental Can Co.'s boxboard mill at Tonawanda.

He succeeds George J. Tooker, who was named northeast regional general manager for the boxboard & folding carton division under a reorganization of that division.

Succeeding Mr. Tarbell as sales manager for the Tonawanda boxboard plant is Jay Curtis.

C. A. Montague, Jr.

Buckeye Names Montague Mgr. of Memphis Pulp Mill

The Buckeye Cellulose Corp. has announced the appointment of Charles A. Montague, Jr., as plant manager of its pulp mill in Memphis.

Mr. Montague succeeds P. S. Moore, Jr., who has been transferred to a management position in Charmin Paper Products Co., Green Bay, Wis. Both the Buckeye and Charmin companies are wholly owned subsidiaries of The Procter & Gamble Co.

Mr. Montague joined Buckeye in Memphis following graduation from the University of Tennessee with a civil engineering degree in 1951. He has held several engineering positions with Buckeye, serving most recently as resident engineer for the expansion program at Buckeye's Foley, Fla., mill.

Mr. Moore, 38, was named Memphis plant manager in April 1956. Earlier, he was process supervisor of the Foley plant and plant engineer at the Memphis plant. He joined Buckeye in 1949 after receiving his mechanical engineering degree from North Carolina State College.

Most Joins Halifax Paper

Dr. David S. Most assumed the duties of technical service superintendent of Halifax Paper Co. on March 1, 1959. In assuming the responsibilities of this position, Dr. Most will replace John J. Priest, who died last December. The Technical Service Section embodies the various technical service functions required by the pulp and papermaking processes at Halifax. These functions include, among other duties, operation of chemical laboratories, product testing for quality, and studies of products, by-products and wastes.

Dr. Most was born in Boston, Mass., and attended secondary schools in Cambridge, Mass. In 1952 he received his A.B. degree in chemistry from Boston University, graduating Cum Laude. From 1952 to 1957 he attended the Institute of Paper Chemistry in Appleton, Wisc., graduating with the M.S. and Ph.D. degrees.

Dr. Most comes to Roanoke Rapids from the Albemarle Paper Manufacturing Co. in Richmond, Va., of which Halifax is an operating division, where he has served since 1957 as research and group leader in the Technical Division. In his new position, he will continue to work in close association with Research and Development, and other Technical sections of Albemarle. Prior to 1957, Dr. Most was employed by the National Container Corp. in Wisconsin, and the Fibre Board Paper Products Co. in California. He served in the U. S. Navy during World War II.

Dr. D. S. Most

PJT NEW LITERATURE

Conoflow All-Electric Actuator

Provides illustrated sales copy and engineering drawings of Model D-62XW for on-off or throttling control, of valves, dampers, louvres, metering pumps and speed changers. Bulletin D-62-1. Conoflow Corp., 2100 Arch St., Philadelphia 3, Pa.

F & P Magnetic Flowmeters

Gives complete information on their obstructionless magnetic flowmeter for metering difficult liquids such as paper pulp, waste sludges, slurries, black liquor, etc. Also discusses principles of operation. Catalog 10D1416. Fischer & Porter, 38 Jacksonville Rd., Hatboro, Pa.

Wood's MS Variable Speed Pulleys

Gives technical data for five "MS" sheaves designed for ratings of 2, 3, 5, 10 and 15 h.p. The pulleys have no keys to obstruct the flow of oil around the surfaces between the flange hub and sleeve. Bulletin 4101. T. B. Wood's Sons Co., Chambersburg, Pa.

Solving Corrosion Problems in Industry

Explains how their duplex tubes help solve corrosion problems in condenser and heat exchanger equipment in many fields. Also provides information about heat transfer efficiencies, design and installation data. Booklet. Bridgeport Brass Co., 30 Grand St., Bridgeport 2, Conn.

Gardner Brightness and Reflectance Meter

Describes this automatic high-sensitivity brightness and reflectance meter. Laboratory Newsletter Volume 4- No. 25. Color Matching Collapsible Tubes is reprint of an article by Dr. D. F. Menard, Wheeling Stamping Co., Wheeling, West Va., and tells how the Gardner automatic color difference meter is used for measuring small degrees of color difference. Gardner Laboratory, Inc., 5521 Landy Lane, Bethesda 14, Md.

Instruments for the Study of Atmospheric Pollution

Revised booklet. Price $2.00. Is a comprehensive listing of devices useful in air pollution investigation and control, and is designed to aid businesses and government in obtaining suitable equipment for the study of their particular smog problems. Available from Order Department, American Society of Mechanical Engineers, 29 West 39th St., New York 18, N. Y.

Instrument and Control Switches

Describes construction features of Type 210 instrument and control switches and their advantages. They are available as either maintained or spring return contact types. The switches are used in conjunction with circuit breakers, transformer tap changers, motor-operated rheostats, instruments, and many other types of electrically controlled apparatus. Bulletin 14B8112B. Allis-Chalmers Mfg. Co., Milwaukee 1, Wis.

L-S Model "H" Electric Fork Lift Truck

Points out how peak maneuverability has been incorporated into the Model "H" through exclusive rear-wheel drive and by recessing the mast between the load wheels. Circular 37. Lewis-Shepard Products, Inc., Dept. R9-2, 125 Walnut St., Watertown 72, Mass.

PTJ NEWS OF CONVERTERS

Orchard Sales Department Reorganized

Orchard Paper Co., St. Louis, has announced a reorganization of the sales department.

The following changes have been made: Harold E. Pillifant has been appointed sales coordinator responsible for the Wholesale Products Division, consisting of the firm's manufactured items such as custom and stock printed wrapping paper and bags, distributed through paper wholesalers.

Warren G. Swisshelm, will replace Mr. Pillifant in the San Francisco office and will cover northern California. Mr. Swisshelm has covered the Southeast for Orchard out of Atlanta for the past three years.

Returning to Chicago as head of that office's Wholesale Products Division is Henry L. Erminger, a member of Orchard's sales force for the last ten years. After a seven year hitch in Chicago, Mr. Erminger opened the Orchard Cleveland office in 1957.

Edgar L. Orchard has taken over as sales coordinator for Orchard's Coated and Saturated Products Division with offices in St. Louis. He has represented the firm on the West Coast for the last seven years. Walker Hamilton is now sales coordinator in charge of new product development at Orchard's St. Louis headquarters. He is a veteran paper man and has held similar positions with both Oxford Paper Co. and Riegel Paper Co. Willard H. Pieper is sales coordinator for the Industrial Printed Paper Division and the Export Division, also at St. Louis. R. Wilbas, sales service manager, assumes additional duties as sales coordinator of the Specialty Bag and Envelope Division. R. W. Robinson has assumed the post of sales coordinator for Orchard's Rich Products Division, a wholly owned subsidiary marketing impregnated paper products to the consumer. To St. Louis from Indianapolis comes Robert L. Kaeding as national sales representative for Orchard's Rich Products Division.

Recent additions to the Orchard sales staff are Robert F. Andel and Sam Nunneley, who will cover midwest and southwest territories working out of St. Louis.

Orchard now has offices in most principal cities and manufacturing plants at St. Louis, Potsdam, New York, and Los Angeles.

Dillard Names Slate Of Officers

A new vice president, C. P. Flynn of Greensboro, and a new director, M. R. Robertson of Roanoke, Va., were elected stockholders and directors of the Dillard Paper Co.

Stark S. Dillard was re-elected chairman of the board and president.

Fibre Box Ass'n Spring Meeting Plans

Final plans for the 20th Spring Meeting of Fibre Box Ass'n. to be held at the Shoreham Hotel in Washington, D. C. on April 8-10, 1959 are announced by Charles H. Carpenter, ass'n. president.

The opening session will begin with the presentation of awards to the Gold, Silver and Bronze ribbon winners in the fifth Fibre Box competition which is held in conjunction with the 20th Spring Meeting. Speakers for that day will include the Honorable Carl F. Oechsle, assistant secretary of commerce for domestic affairs and Raymond G. Fisher, marketing vice president of Continental Can Co. Senator Barry Goldwater of Arizona, Walter A. Belson, assistant to the president, American Trucking Ass'n. and Peter W. Hoguet, president of the Econometric Institute will talk at the closing session on Friday.

A president's reception for members, guests and government officials will be held on Thursday evening, and wives of the members will be given a tour of the embassies during the day on Thursday.

Carton Craftsmen Adds Warehouse Space

Carton Craftsmen, Inc., Cicero, Ill., is erecting a 37,000 sq. ft. addition to its facilities for warehouse purposes. The company manufactures folding cartons.

Newly Formed Company Constructing Plant

Precision Carton Co., newly formed milk carton manufacturer, has under construction a 42,000 sq. ft. plant, in Aurora, Ill. The plant is on a six-acre site.

Business Form Institute Meets

Sales of business forms in 1958 rose to a conservatively estimated $350,000,000, which equal those of 1957, a record year for dollar volume by the industry, according to an announcement made by the Business Forms Institute at its annual members' meeting held February 19-20 at the Park Lane Hotel, New York.

Dollar volume of forms sold climbed in the past two years $42,000,000 for each year over 1956, with every indication that 1959 will exceed the 1957 and 1958 totals, although the increase is expected to be steady rather than spectacular.

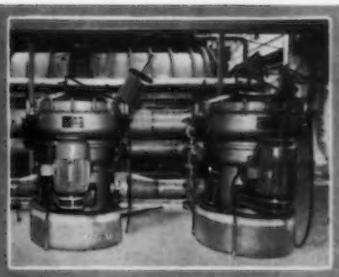
W. C. Lamprechter, vice president and general manager, Stephen Greene Co., Philadelphia, was reelected president of the Institute. Lester J. Johnsen, executive vice president, Atlantic Register Co., Waltham, Mass., was elected first vice president, succeeding T. S. Duncanson, president of Moore Business Forms, Inc., Niagara Falls, N. Y.

Thomas A. Taylor, vice president, Schwabacher-Frey Co., San Francisco, was renamed second vice president, and H. M. Meloney, of the main BFI office at Greenwich, Conn., continues as executive director.

FIFTEEN REASONS WHY
PULP and PAPER MAKERS
associate:

- increased product cleanness, quality and uniformity
- decreased rejects
- decreased machine shutdowns
- decreased overall cost per ton

with BIRD MACHINERY



BIRD CENTRISCREENS

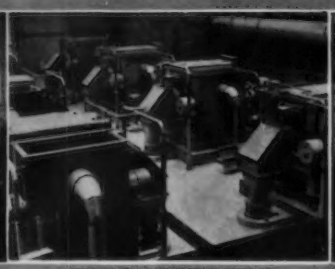
hailed as a major advance in pressure screening large volumes of paper stock with high efficiency at low cost per ton.

BIRD CENTRIFFLERS

remove junk and heavy dirt as stock leaves the pulpers; protect valuable equipment against damage.

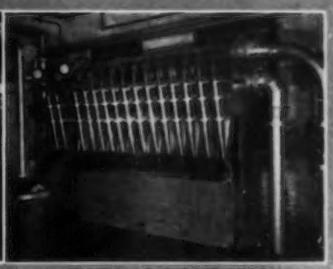
BIRD JONSSON SCREENS

knot or screen large volumes of pulp at low cost, through perforate plates via controlled vibration.



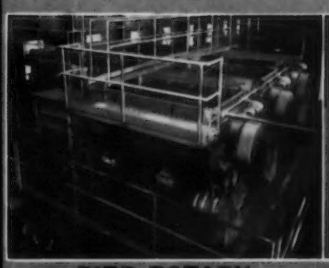
BIRD VIBROTOR SCREENS

handle large capacity of high consistency stocks through slotted plates, in small space at low screening cost.



BIRD CYCLEANS

free vortex, drop-in-pressure units that remove shives and specks, improve fibre hydration, reduce breaks, increase quality and output.



BIRD ROTARY SCREENS

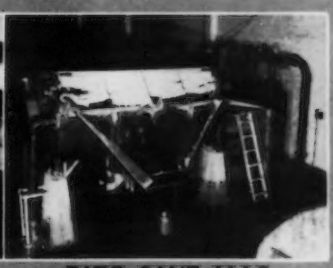
guard the quality and uniformity of top grade papers, individualizing the fibres and removing lumps, strings and slime.

DIRTECS

remove abrasive dirt, sand and metal particles that increase rejects and do damage to wires, rolls and pumps. Regular or "King" size.

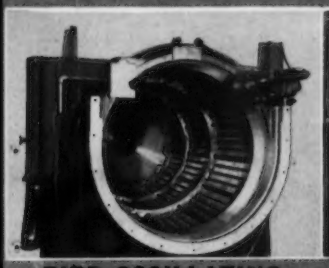
BIRD CENTRIFINERS

employ powerful centrifugal forces to remove specks, rubber or metal particles from specialty stocks.



BIRD SAVE-ALLS

recover valuable, completely processed fibres from white water in the simplest, surest, most economical way.



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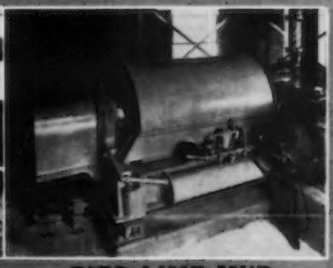

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deliver uniform feed to the kiln, improving operation and reducing cost.

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European Paper and Board Use to Increase by 600,000 Tons per Year

Eric Lagerloef
Secretary
APPA Export Committee

Paper consumption should continue to rise in Western Europe through the next several years both in the Common Market countries and in the 11 other countries of the Organization of European Economic Cooperation (OEEC). Through these years the long-term outlook for U. S. woodpulp, paper and paperboard to the 17 OEEC countries should be good.

The Author

Four Principal Factors

These assumptions are based on the following four factors:

1. The six Common Market countries, the largest paper and board users in Western Europe, already account for more than 50 per cent of the area's total consumption;

2. The continuing rise in consumption resulting from the rehabilitation of West European economies after World War II, as evidenced by the fact that in 1957 the 17 OEEC lands consumed 9,139,000 tons more of paper and board than in 1947;

3. The further development of packaging because of increased industrialization and the spread of the supermarket.

4. The adoption of multiple uses of paper, common in the United States but yet to find acceptance in Western Europe.

Forecasting Future Demand

In 1957 the OEEC lands consumed 15,924,000 tons of paper and board as against 6,775,000 tons in 1947. In the same decade, U. S. exports of woodpulp to this area of Western Europe rose from 54,000 tons to 334,000 tons. Paper rose from 15,000 to 36,000 tons and board from 27,000 to 157,000 tons. Total value of all three exports in 1957 was more than $90 million.

During the years 1957 through 1962, paper and board consumption in Western Europe will increase by 3.5 per cent or 600,000 tons a year, attaining a total of 19,000,000 tons by the end of 1962. This forecast is based on the increase of 135 per cent in paper and board consumption during the recovery decade 1947-1957 and on the four growth factors on which the forecast as a whole is predicated.

This 1957-1962 estimate is somewhat higher than the one made by the United Nations last year. The U.N. survey of the 17 OEEC countries foresaw a total rise in consumption to 18,100,000 tons by the 1960-62 period, with an annual increase of 420,000 tons or less than 3 per cent a year.

This estimate of 3.5 per cent as "a more realistic though still conservative growth factor. With a continuing high rate of industrialization and the other ways in which Western Europe is expanding its uses of paper and board, the 3.5 per cent increase would be a bottom figure.

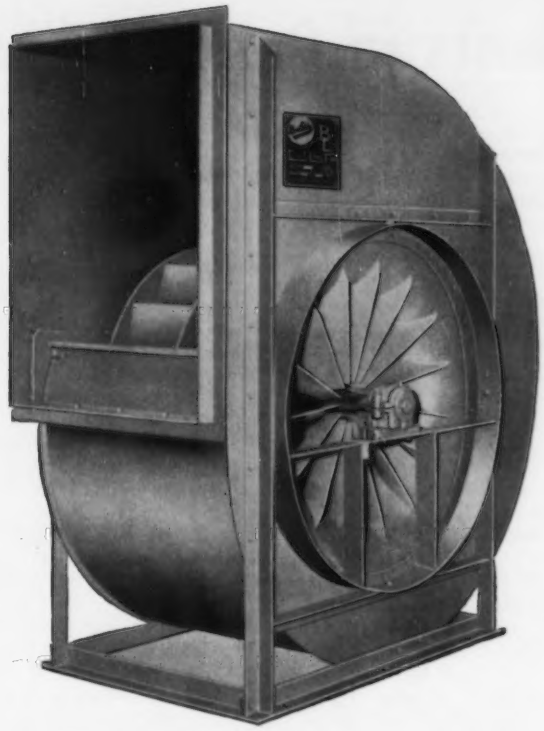
The rising demand will be greater than can be met by Western Europe's limited raw materials and production facilities and this should eventuate in a larger, though even more selective market for U. S. goods.

Russia as a Factor

Russia is an unknown factor which could be troublesome if—as in the case of disruptions caused by dumping tin and aluminum on world markets—she ignored home needs and used mass dumping of pulp and paper as a political weapon to further her economic penetration.

This must be kept in mind, though the impact on Western Europe at some future date could be eased if the 17 OEEC Nation Group were to stand solid against such a threat. Disruption in other markets could be attempted, he concluded, but if the highly industrialized countries of the world were to ignore these "bargains" because of their very nature, little or no adverse economic effects would be registered.

Presented at the APPA Export Committee Meeting.



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Recent Developments in Papermaking

Roy P. Whitney
Vice President and Dean
The Institute of Paper Chemistry

Much of the basic research on papermaking during the past few years has been concentrated in two areas—studies of the drainage of water from fibrous suspensions, and studies of fiber flocculation. Of the two, by far the more effort has gone into the drainage study, and the more progress has been made. Although the flocculation of fibers has been studied sporadically for many years, and is now being attacked more systematically in several laboratories, our understanding of this phenomenon is still nebulous. Any adequate insight as to the interaction of the two processes of drainage and flocculation is still in the future. The recent work on drainage is highly significant, in my judgment, and I want to tell you briefly about it.

Attention to Table Rolls

Table rolls have come in for a lot of attention in the recent studies. Their water-removing abilities were not always recognized, however; table rolls were in fact originally conceived and employed solely to support the wire while the sheet was being "formed." But it gradually became apparent that they were removing a great deal of water, and that they must, by some means not understood, be acting as suction pumps. Although the nature of this pumping action was speculated upon as many as 30 years ago, it has been only within the past decade that a logical interpretation of the phenomenon has been developed.

One of the perplexing factors relative to the table roll pumping action was the influence of machine speed on drainage rate. As the machine speed is increased, the amount of water which must be drained increases in the same proportion, as long as the headbox consistency remains unchanged. It must follow, then, that if the drainage on the wire depends simply on hydrostatic head, as had always been supposed, the length of the table roll section should be increased proportionately with speed. As you well know, such is not the case. As the speed goes up, the table rolls drain more and more water, even more than corresponds proportionately to the speed increase. This was the clue to the postulation of some sort of "dynamic" table roll action, which must be a strong function of machine speed.

The concept of a driving force and an opposing resistance has proved to be very useful in dealing with many engineering rate phenomena, including paper machine drainage. In general terms, the rate at which an operation proceeds is directly proportional to the driving force and inversely proportional to the resistance. To get at the table roll situation more critically, we must consider separately the driving force which causes drainage, and the resistance which inhibits it.

Until 1950, the only driving forces recognized at a table roll were the small hydrostatic head of slurry on the wire, and the slight suction leg represented by the "nip" of water between the under side of the wire and the trailing cylindrical surface of the table roll. These represented at most an inch or so of water, and could not begin to explain the high drainage rates or the effect of speed on drainage. Through a remarkable theoretical analysis by Sir Geoffrey Taylor at Cambridge University and some ingenious experimental work by Peter Wrist who was then at the British Paper and Board Industry Research Association, we now know that the major driving force is a suction developed in the downstream nip between wire and table roll. This suction is related to the kinetic energy of the flowing stock and consequently increases very strongly with machine speed. In fact, Taylor's equations indicate that the suction reaches a maximum value of 34 feet of water—that is, a perfect vacuum—at a machine speed of 2800 feet per minute. Actually, because of the evolution of air and boiling of the water at the very low pressure, the maximum suction effect of the table roll is reached at about 2500 to 2600 feet per minute. Boiling in the nip at these speeds has been observed in high-speed movies. For the first time, therefore, we have a concrete physical picture of the table roll action, and also a concrete limitation on machine speed, for the conventional fourdrinier. Above about 2600 feet per minute, we must increase the number of table rolls in direct proportion to speed increases in order to maintain equivalent drainage.

Drainage Filtration Resistance

The resistance to drainage depends not only upon machine conditions, but also on the nature of the furnish—the kinds of fiber, how they have been refined, the extent and nature of the fines and debris present, and so forth. This term has been defined quantitatively, in extensive research by Ingmanson and others at the Institute, and it can be measured in the laboratory. The so-called "filtration resistance" has a sound basis in that it is related to more fundamental properties of pulps. It also has been shown to correlate well with actual machine drainage. Measurements on various pulps and furnishes have shown the resistance to cover more than a thousand-fold range. Freeness is an inverse qualitative measure of drainage resistance, but the freeness test is empirical and uncontrolled, and it cannot be interpreted quantitatively and applied to machine operation.

Now by this time you are probably asking yourselves what all this has to do with practical papermaking. I think it has a great deal to do with it. While I have obviously drawn an

Above about 2600 feet per minute, we must increase the number of table rolls in direct proportion to speed increases in order to maintain equivalent drainage.

Abstracted from a talk at the Annual Meeting of the Association of Pulp Consumers, Inc.

through the use of several top wires.

oversimplified picture, we are learning to use these concepts quantitatively in machine design, in stock preparation, and in machine operation, to practical advantage. Although I seem to have been talking a lot about table rolls, the concepts can be applied equally as well to suction boxes and the suction couch. In fact, the application is much more simple and direct in these cases, as long as the sheet is completely water-filled. When air is sucked into the sheet, the situation becomes much more complex, but the same concepts can be extended and applied.

Predicting Behavior of Furnish

By way of example, we can now predict with much more surety the behavior of a given furnish on a particular machine. We can separate the influence of the furnish variables from that of the machine variables, and predict the effect on drainage of changes in refining, in the extent of white water recirculation, suction on the flat boxes, machine speed, and the like. We know that the resistance of a given furnish to drainage depends strongly on the pressure head causing drainage, and we can measure the exact nature of this dependency on the laboratory. We know, further, the influence of machine speed on this pressure head. Thus we can make our measurements at the particular head which is the proper one for a desired speed, instead of relying on freeness, which we now know is measured at heads much too low for any but the slowest machine speeds. It is no longer a mystery as to why two furnishes, one of which drains more rapidly than the other on the machine, reverse this behavior in freeness measurements.

Several mills, employing very free and lightly refined stocks, are using simplified versions of the resistance apparatus for the control of refining, thus permitting for the first time adequate regulation and control of the stock going to the paper machine. With such stocks, variations of as much as twenty-fold in drainage resistance have been demonstrated at essentially constant freeness.

To us, the most exciting utility of these new concepts is in paper machine design. We look forward to the day when laboratory measurements on a desired furnish can be used, in conjunction with an adequate understanding of the principles and the phenomena involved, to design on a quantitative basis the ideal paper machine for handling this furnish. That day is not yet here, and there are many complex problems yet to be resolved which I have ignored completely, but we feel that the goal is attainable. In one or two cases, we have studied a certain furnish, predicted its behavior at a given speed, and then made extensive measurements on an operating machine to check up on our predictions. While there have been discrepancies, the attempts have been most encouraging.

New Forming Machines

It would be premature to suggest that the fourdrinier is becoming obsolete, yet, as you well know, there is much interest in other means of wet forming. This interest has undoubtedly been encouraged, in part at least, by the strong trend toward increased machine speeds and the inherent difficulties which the higher speeds exaggerate. It is almost axiomatic that sheet formation and uniformity deteriorate rapidly as speed is increased. From only the standpoint of fiber flocculation, one would predict that sheet formation should be improved at higher speeds, since the time available for flocculation decreases. The difficulty is not fiber flocculation, but undoubtedly is due largely to greatly exaggerated mechanical disturbances, particularly in the table roll section. When one observes the vibrations, the waves, the water spouts and all of the other effects, particularly violent at the very low consistencies near the slice, he wonders not only how a mathematical analysis could possibly be applied to such a system, but how paper can be made at all. In spite of the complexities involved, recent research at the University of Michigan—in fact presented only this morning at the TAPPI meeting — suggest strongly that some of these difficulties are inherent in the table roll action. While the table rolls may be very effective as water removers, they would seem to have serious deleterious influences on sheet properties at high speeds.

The research which I have discussed has led to significant new understanding, not only of the existing papermaking techniques but also of the requirements for improved forming methods. It is essential that it be continued, for like most research it has raised as many questions as it has answered. It is not necessary, however, that new developments await a complete understanding of the field, and this of course is never the case. In the last decade, we have witnessed notable contributions toward improved forming devices. The most promising of these seem to embody some sort of hybrid or combination of the fourdrinier and the cylinder machine. The suction breast roll, for example, now used commonly for high-speed tissue machines, is essentially a cylinder with a headbox mounted over it. It would seem to suffer from one of the major faults of the conventional cylinder, in that an essentially stagnant body of dilute slurry is being "scrubbed" by the moving wire and the wet mat which it is accumulating, and the resultant shear forces give rise to a variety of sheet formation difficulties.

Particularly if new formers are developed which permit significantly higher speeds, improved drying techniques must be evolved or machine rooms will have to be a lot longer!

The vacuum formers, of which several types have been proposed, would appear to offer a more promising approach. All employ some means for attempting to reduce the excessive disturbances caused by free-surface flow on the fourdrinier or by the scrubbing action in the stagnant cylinder vat. In the Stevens former, for example, the dilute incoming furnish flows around the cylinder, through a channel of decreasing cross section, so that as drainage takes place it should be possible to maintain the relative speeds of the cylinder wire and the furnish nearly constant. Incidentally, the vacuum formers offer a case where the concepts of driving force and resistance which I have discussed can be applied in design more rigorously than with the fourdrinier, and this is being done.

Other Wet-end Developments

I should also mention two other relatively new developments in paper machine wet ends. The replacement of some table rolls by suction boxes has been tried on commercial high-speed machines, for the purpose of lessening wire marking of the sheet. Another approach employs both a bottom and a top wire, with the stock fed into the wedge between the two, and drainage both up and down. Multi-ply sheets can be formed

through the use of several top wires, and speeds in excess of 3000 feet per minute have been reported.

While none of us here will see the complete obsolescence of the fourdrinier, I think that we shall see other types of wet formers in widespread and successful operation on many grades of paper. At the same time, it should be noted that none of the new forming devices so far proposed seems to approach the fourdrinier in versatility and in the wide range of conditions over which it will operate successfully.

Paper Drying Investigations

I have confined my discussion to the wet end of paper machines solely because of time limitations. Engineering research studies on paper drying during the past few years have also shown progress by no means insignificant. Drying seems to be a neglected operation in the industry, in spite of the costs involved and often in spite of production limitations imposed. Particularly if new formers are developed which permit significantly higher speeds, improved drying techniques must be evolved or machine rooms will have to be a lot longer!

Among the recent studies on drying, one of the most significant is the work of Dreshfield and Han at the Institute. They were concerned with the mechanism of both liquid water and water vapor movement within the sheet during drying. We shall not go into that work here, but did you know, for example, what happens to the water when a wet sheet is placed against a hot dryer surface? The liquid water moves toward the hot surface, evaporation takes place at the hot surface rather than at the free surface, and then the water vapor must make its way back through the wet sheet in order to escape. One wonders whether dryers could be dreamed up which would at least make it easier for the water to get out.

My discussion of recent developments in papermaking has been confined to some of the newer physical and engineering aspects, rather than aimed at new products or new uses of paper, which would perhaps have been the more conventional approach. The reason is that I find these new concepts exciting, and believe that they will play a significant role in shaping the future technology of papermaking. As long as our industry can maintain the fresh and the bold outlook exemplified in these studies, its future is assured.

Unbleached Kraft Paper Review for 1958

S. D. Fleet
President
Kraft Paper Association, Inc.

In the last half of 1958 the unbleached kraft paper industry, like so many other industries in the United States, recovered from the depths of a recession which began in the middle of the previous year. The turnabout took place in mid 1958 with steady improvement throughout the final six months. In the face of the recession, the performance of this segment of the paper industry must be considered excellent. Shipments of all unbleached kraft paper in the United States in 1958 totaled approximately 2,600,000 tons, a decline of only two per cent from 1957.

Outlook for 1959

The kraft paper industry enters 1959 with confidence. Its rate of operations, though not equal to the high rates of 1955 and 1956, should be satisfactory. Its inventories and those of its converter plants are at present reduced from those of a year ago. Its basic customers, who are in fact everyone, are increasing directly with the dynamic expansion in the population. The demand for kraft paper in 1959 should expand by close to 200,000 tons over 1958.

The realization of such tonnage in 1959 should be reflected in better operating rates even though production facilities will not be so fully utilized as they were during such years as 1955 and 1956. In the current year, there will be three new paper machines introduced for part or full-time production of kraft paper. The production of these machines will, however, be substantially less than the anticipated increase in demand during 1959. With the completion of these three machines, 1959 may prove to be the conclusion, temporarily at least, of the extensive expansion of the past 20 years and further expansion plans may well be deferred until demand has risen closer to productive capacity.

Competition Posts a Challenge

The kraft paper industry has always been concerned to produce the best possible kraft papers at competitive prices. It has been constantly improving its product over the years and adding new papers to meet more and more exacting specifications for more and more purposes. In recent years, to the intra-industry competition, there has been added competition from outside the industry by foils, synthetic fibers and films. These are and will be serious competitors and post a challenge to the industry. Undoubtedly, with the stimulus of this additional competition, we shall develop new qualities and uses for our products sooner than we would have done otherwise.

Unique Group Research

Three years ago the industry, as an industry, took cognizance of the problems posed by this competition and instituted a research and development program—the first group research and development program, I believe, in the paper industry. This program has served two purposes. It gave the industry a home base from which to undertake the launching of overall industry market and research studies and more importantly it alerted all members of the industry to the importance and necessity of developing better papers and new uses. We hope in the coming year to continue and expand the work of this Committee so that in the future it will be an important adjunct to the progress of this industry in its self improvement and in the competitive struggle.

Extensible Paper!!!

An important development within the industry in 1958 was the introduction of extensible kraft paper on a commercial scale. Its introduction, I hope, will prove an early contention of the industry's Research and Development Committee that any improvement in one or more of the physical characteristics of kraft paper would open up new uses and markets. Just as the development of wet-strength paper several years ago made today's large paper towel and potato sack markets possible so should extensible paper make additional markets possible. These are only the beginning. The member companies, increasing their research efforts, are hard at work and will develop better kraft papers to do more jobs than ever before.

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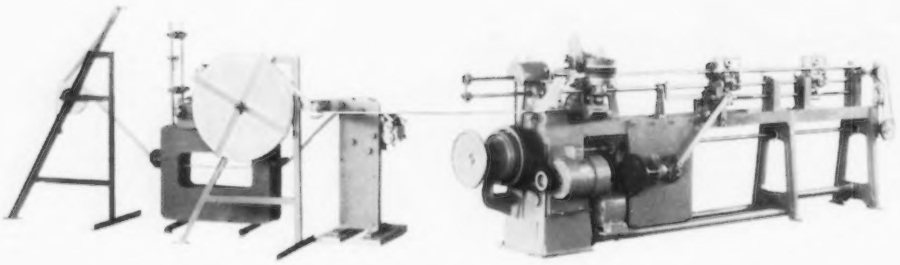

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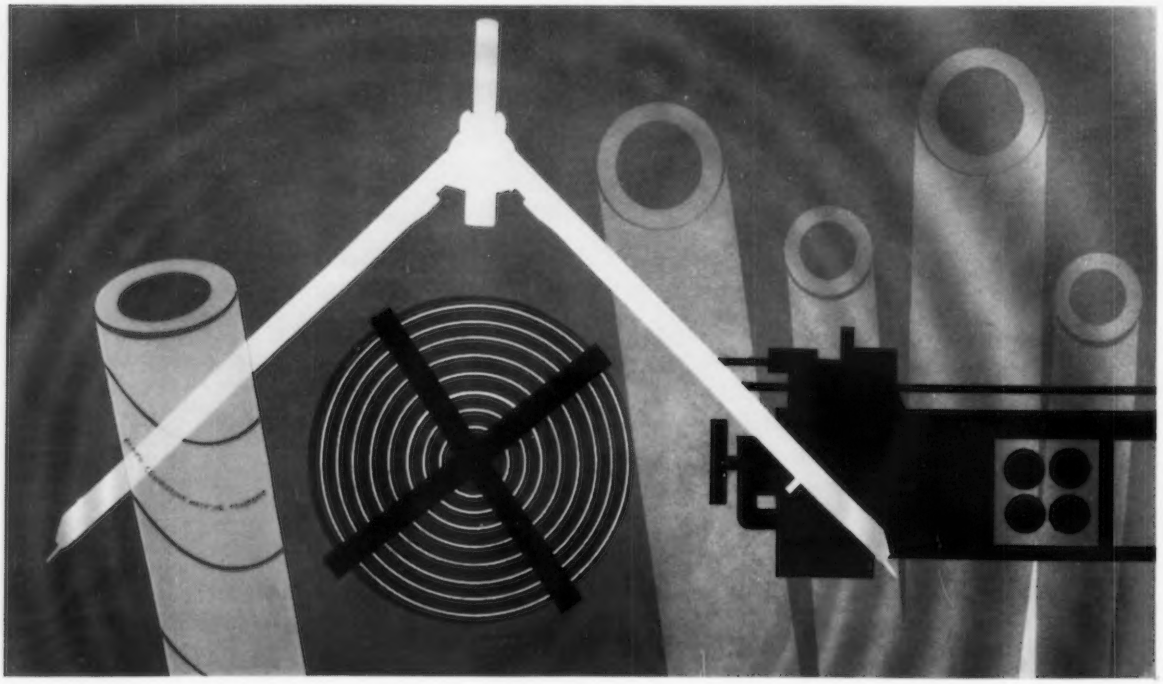

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Paper Week Stresses Education and Research for Nation's Growing Needs

The pressing need of adapting the nation's educational and research facilities to meet growing requirements at home and abroad was a major theme of the 82nd Annual Convention of the American Paper & Pulp Association when it met February 22 to February 26.

The convention also concerned itself with the growth of the paper and pulp industry, future markets and expanding uses of paper to meet the rising demands of the country's increasing population.

In addition to the meetings, luncheons, etc., of the more than 20 related or affiliated associations, there were four major functions sponsored by APPA. These included: Materials Committee Meeting, Export Committee Meeting, Joint APPA-TAPPI Research Forum and the Annual Dinner.

Materials Committee

Fred C. Goodwill, St. Regis Paper Co., presided over the 13th annual Materials Committee meeting. W. L. Thornton, Jr., general traffic manager, Kimberly-Clark Corp., discussed the transportation problems of the paper industry. Thomas S. Chambers, consultant, Owens-Corning Fibreglass Corp., presented a paper on the use of glass fibers by the paper industry (summarized in this issue). C. C. Landegger, vice president, Black-Clawson Co., discussed the trends on pulp and paper mill equipment prices (To be published in next week's issue).

Export Meeting

Jones H. Stewart, manager converter papers, Strathmore Paper Co., was chairman of a session entitled "The Paper Man Looks at the Common Market." The speakers at this session were: W. K. Hora, assistant cashier, First National City Bank of New York; D. F. Heatherington, director, European division, National Foreign Trade Council; C. P. Auer, president, U. S. Paper Exporters Council, Inc. (condensed in this issue). Eric Lagerloef, secretary of the Export Committee, presented a report (published here) on the outlook for further sales of paper to Europe.

J. R. Kimberly, APPA President

Safety Award At APPA Dinner

The American Paper and Pulp Ass'n. concluded its Paper Week activities with its annual dinner at the Waldorf-Astoria. About 600 persons were in attendance. J. R. Kimberly, president of APPA, presided over the activities. Greetings from the Canadian Pulp and Paper Ass'n. were extended by its president, R. M. Fowler.

The Buckeye Cellulose Corp., Cellulose and Specialties Div., Memphis, Tenn., received the National Safety Award in recognition of the lowest five-year cumulative accident frequency per million man hours worked for the pulp and paper industry. Obed Windham, safety engineer of Buckeye, accepted the award on behalf of his company from Mr. Kimberly.

The 1958 regional winners were: Pacific Coast, Crown Zellerbach Corp., Port Townsend, Wash.; Midwest, Champion Paper & Fibre Co., Hamilton, Ohio; Southern, Scott Paper Co., Mobile, Ala.; Lake States, Scott Paper Co., Falls Power & Paper Co. Div., Oconto Falls, Wis.; Middle Atlantic, P. H. Gladfelter Co., Spring Grove, Pa.; and New England, Fraser Paper Co. Ltd., Madawaska, Maine.

"The Sputter After Sputnik," a provocative and admonishing address by Dr. Jean Paul Mather, president of the University of Massachusetts, extemporized that, by and large, the public has relegated the "teacher, scientist, and intellectual to an underpaid 'Ichabod Crane' status.

"Raiding of the intelligent and trained by industry and the best-heeled institutions and organizations of society, educational and other, is producing a group of semi-warm intellectual zombies for the classroom task and in the long run represents the process of killing the goose that lays the golden egg of progress in the field of ideas, imagination, and progress.

"Industry has a stake in a comparative society even in pure research, and many of our large corporations would be doing the best possible national and international service to their stockholders and the public if they would allocate funds to provide for the subsidization of the best minds—and expect of these best minds only thinking rather than gizmo or gadget production.

"What the American public, corporate and individual, must realize is that dedication and ivy are not digestible in an inflationary economy. Even professors like to eat, and the current cry for raising the salaries of intellectuals to levels comparable with other professions is one of both realism and relevance."

APPA Officers Re-elected

Winding up the APPA Annual Meeting, the following officers and Executive Committee for 1959-1960 were elected: President: J. R. Kimberly, President & Chairman of the Bd., Kimberly-Clark Corp.; first vice-president: H. E. Whitaker, Chairman of the Board, Mead Corp.; vice-presidents: W. R. Adams, President, St. Regis Paper Co.; M. D. Bardeen, President, Lee Paper Co.; Alexander Calder, Jr., President, Union Bag-Camp Paper Corp.; Hugh J. Chisholm, Chairman of the Board, Oxford Paper Co.; R. C. Doane, President, International Paper Co.; R. F. Erickson, President, Rayonier Inc.; J. B. Faegre, Chairman of the Board, Minnesota and Ontario Paper Co.; M. C. McDonald, President, Great Northern Paper Co.; J. L. Madden, Vice President, Scott Paper Co.; George E. O'Connor, President, Mohawk Paper Mills, Inc.; Reuben B. Robertson, Jr., President, Champion Paper and Fibre Co.; Samuel R. Sutphin, Chairman of the Board, Beveridge Paper Co.; Roy J. Sund, Vice President and Gen. Mgr., Marathon, a Division of American Can Co.; G. J. Ticoulat, Senior Vice President, Crown Zellerbach Corp.; and R. W. Wortham, Jr., Executive Vice President, Southland Paper Mills, Inc.

All these were re-elected with the exception of two new members: Roy J. Sund, Vice President and General Manager, Marathon, a Division of American Can Co., Menasha; and R. F. Erickson, President, Rayonier Inc.

SAPI Luncheon and Elections Salesmen Ass'n.

At the annual meeting of the Salesmen's Ass'n. of the Paper Industry, the following officers were elected: president, Joseph E. Hoffmann, Standard Paper Mfg. Co.; vice presidents, Jack K. Barry, Fraser Paper, Ltd., Stanley Bogart, Potlatch Forests, Inc., Robert O'Neill, Riegel Paper Corp., and Edward J. Rolain, Mosinee Paper Mills Co.; assistant vice presidents, William McKee Dunn, Riegel Paper Corp., Peter B. Reich, Simpson Paper Co., Philip A. West, Oxford Paper Co., and Walter Worman II, Mead Papers, Inc.

Paul C. Craig, outgoing president of the Salesmen's Assn. of the Paper Industry, welcomed the members to their 40th anniversary luncheon and then addressed his remarks on "The Era of the Professional Salesman."

"Last year, the paper industry only experienced a precipitous decline from a super boom to a high level

H. E. Whitaker, APPA V-P

of prosperity. This condition was in large part due to an expanded productive capacity that had to be created to meet the anticipated demands of our population in the years ahead. Long range planning for the future inevitably causes short range dislocations.

"With production geared for expanding future markets, the day of the order taker is over. Markets must be created. Accounts cannot just be sold, they must be served. So it behooves us to recognize the fact and sponsor efforts to give real meaning to the terms of sales engineering and market consultant by developing a special curriculum for the University training of salesmen in paper technology, customer technology, marketing and selling techniques. SAPI's educational plan is our first substantive step to gear up for tomorrow. In this, as in most other ventures, might I add that, money isn't everything—but—it's a long way ahead of whatever takes second place.

The principal speaker, Charles D. Jackson, a Time, Inc., vice president, reflected upon the "Decade of Decision," reminding us that International Communism has not mathematically gained one square inch of real estate in the last nine years. the Soviets are continuing their game of

C. D. Jackson Addressed SAPI

encirclement through the added arsenals of science and economic warfare." He cited as examples the unsettled tensions of the Near East, the Africans' desires for national freedom, China's 'make or break' experiment to achieve economic independence; the Berlin situation; and the Soviet Union itself. He added that there is "at least the beginning of Russian pride in the Communist regime; partly due to Sputniks, partly due to a much less omnipresent secret police, partly to a folksy Mr. Khrushchev in place of sinister Mr. Stalin, as well as a higher standard of living than ever before within the context of Russian citizens' experience."

On the brighter side, Mr. Jackson lists as preventives to this ring of encirclement the "importance of Cyprus to the eastern flank of NATO, the gradual disillusionment of Southeast Asia to Communist promises, the new France under de Gaulle, and the European Common Market."

"The directional lines of the forces of evil are now quite clearly etched," continued Mr. Jackson. "The folly of appeasement and the futility of western concession, unless balanced by equal concession should be quite clear. Take Mr. Mikoyan's recent visit, the U. S. military plane shot down over Armenia, Russian radio jamming, etc., etc. And yet we somehow continue to be mesmerized by Soviet sales talk.

"And the directional lines of the forces of hope . . . are just as clear: 'steadfast strength' (Quemoy, Lebanon and, we hope, Berlin); economic aid (especially to Africa) without interest necessarily; and national purpose (vs. apathy).

"To preserve what we have achieved," concluded Mr. Jackson, "we must look to the closing of the Declaration of Independence, wherein the Founding Fathers 'mutually pledged' to each other their lives, their fortunes and their sacred honor to maintain our life, liberty, and the pursuit of happiness."

Mr. Craig adjourned the gathering by relinquishing the gavel to the 1959 president, Joseph E. Hoffmann, of Standard Paper Mfg. Co., New York.

Sulphite Paper Manufacturers

Members of the Sulphite Paper Manufacturers Ass'n., Inc., reelected Earl M. McCourt chairman of the Ass'n. at the 27th Annual Meeting. Mr. McCourt is sales manager of waxing, tissue, board, pulp, and by-products for Consolidated Water

Roy Whitney Addressed Consumers

F. R. White Heads Consumers

J. B. Cowie, Kraft Paper V-P

Power & Paper Co., Wisconsin Rapids, Wis. Walter C. Shorter, Union Bag-Camp Corp., was newly elected vice-chairman.

Elected members of the Board of Governors included: R. C. Flom, Marathon Division of American Can Co.; Wayne A. Brown, Crown Zellerbach Corp.; J. R. Cryan, Fraser Paper Ltd.; A. P. Mitchell, Riegel Paper Corp.; Neil E. Nash, Nekoosa Edwards Paper Co.; R. A. Nash, Sorg Paper Co.; A. Southon, KVP Co.; H. W. Suter, Jr., Champion Paper & Fibre Co.; H. B. Vergara, International Paper Co.

Featured speaker at the meeting was Raymond Rodgers, Professor of Banking, New York University, who spoke on the timely topic "Inflation Is *Not* Inevitable." Prof. Rodgers speech is printed in full in this issue.

New converting processes and new paper products held the spotlight at a meeting of specialty mill members of the Kraft Paper Ass'n. and the Sulphite Paper Manufacturers Ass'n.

This joint session of the two groups was arranged as a feature of Paper Week by R. A. Nash, vice president of The Sorg Paper Co. and chairman of the Specialty Paper Committee of the Kraft Paper Ass'n.

V. E. Calvin, vice president in charge of sales for Cincinnati Industries, Inc., discussed "New Horizons with Formable Paper Materials." Cincinnati Industries recently announced a new process by which its X-Crepe kraft in combination with thermoplastic materials can be molded into compound curves, which opens a wide variety of end uses.

Another feature of the program was "The Vaculite Story" presented by Charles G. Ellington, vice president and general manager, and Allan R. Dragone, vice president in charge of sales and marketing, of the Vaculite Corp. This company, owned jointly by the Champion Paper & Fibre Co. and National Research Corp., produces various types of metalized papers by an entirely new and unique process. Their present adaption to the packaging and reflective fields were described.

Mr. Nash spoke on "How Production Aids Sales."

Pulp Consumers

Recent developments in paper making and the world outlook for market pulp were discussed by industry leaders at the 18th annual membership meeting of the Association of Pulp Consumers.

Papermaking developments was the theme of a report by Roy P. Whitney, vice-president and dean of the Institute of Paper Chemistry. Dr. Whitney's speech is summarized in this issue.

D. G. Driscoll, president of the Pulp Consumers and president of the Sorg Paper Co., reported on the association's activities and on its pending and planned projects. Trends affecting the world outlook for market pulp were discussed by Reed R. Porter, executive secretary and treasurer.

F. R. White, president, Union Paper Manufacturing Co., New Hope, Penn., was elected president of the Consumers. He previously held the position of vice president.

American Pulpwood Ass'n.

George Amidon was reelected to the position of president of the American Pulpwood Ass'n. Mr. Amidon is the 11th president of the American Pulpwood Ass'n. since its formation in 1934. Mr. Amidon has been director of Woodlands for the Minnesota & Ontario Paper Co. since 1956.

G. B. Amidon, New Pulpwood President

The following members of the board were elected vice presidents of the association: A. G. Curtis, Gaylord Container Corp., Division of Crown Zellerbach Corp., Bogalusa, La.; D. E. Hess, Glatfelter Pulp Wood Co., Gettysburg, Penn.; and L. J. Kugelman, International Paper Co.

Kraft Paper Elects

At the annual meeting of the Kraft Paper Ass'n. S. D. Fleet, vice president of Albemarle Paper Manufacturing Co., was reelected president of the association and J. B. Cowie, assistant vice president and general sales manager of the Hollingsworth & Whitney Division of Scott Paper Co., was reelected vice president.

In addition to the regular annual reports by the treasurer, the secretary and the president (reproduced here), two guest speakers addressed the members.

Carl J. Reith, vice president of The Kroger Co., spoke on the subject "Something New *Must* Be Added." In this talk he drew an interesting picture of the changes in food merchandising from the days of the old service store to today's modern supermarket and the part that effective packaging contributed to this development. The need for continued research in the area of consumer satisfaction was important not only to his company but to the kraft paper industry.

Peter W. Hoguet, president of The Econometric Institute Co., Inc., concluded the business part of the meeting with his address entitled, "The Outlook for the Economy and Demand for Kraft Paper in 1959."

The meeting was followed by the annual luncheon.

A. Crane Heads Writing Paper

F. S. Leinbach Chairs Glassine

R. E. O'Connor, APPA Exec. Secretary

Writing Paper Manufacturers

Arthur Crane, Crane & Co., Inc., Dalton, Mass., was elected president of the Writing Paper Manufacturers Ass'n. Mr. Crane succeeds Harold H. Holden, Eastern Division, Standard Packaging Corp., as president.

The election of Mr. Crane is unique in many respects. His company, founded in 1801, was one of the founders of the Writing Paper Manufacturers Ass'n. at Pittsfield, Mass., February 13, 1861. In addition, Arthur Crane is the third member of his family to serve as president of this association. The Writing Paper Manufacturers Ass'n. is the oldest national trade association in the United States.

J. D. Zink, Hammermill Paper Co., was re-elected vice president and chairman of the Sulphite Bond Group. This is Mr. Zink's second year in this capacity. Thomas Leech was elected a vice president and chairman of the Rag Content Group.

M. C. Dobrow was re-elected executive secretary-treasurer and John F. Darrow was re-elected assistant secretary, and Miss Olive F. McGill was re-elected assistant treasurer.

F. B. McFarland, Port Huron Sulphite & Paper Co., was elected chairman of the Thin Paper Group. Mr. McFarland succeeds Arthur Crane, who was elected president. The Thin Paper Group consists of manufacturers of cigarette paper, condenser paper, carbonizing, India and Bible and other fine thin paper specialties.

G. H. Carlton, Standard Paper Manufacturing Co., Richmond, Va., was elected chairman of the Bristol Board Group. He succeeds H. W. Suter, Jr., Champion Paper and Fibre Co.

Glassine & Greaseproof Mfrs.

The election of officers for 1959 took place at the 28th Annual Meeting of the Glassine and Greaseproof Manufacturers Assn. Frederick S. Leinbach, executive vice president, Riegel Paper Corp., New York, was elected chairman of the association. Guy E. McCorison, president, Thilmany Pulp & Paper Co., Kaukauna, Wis., was named vice chairman. Charles H. Leach was re-appointed secretary-treasurer.

New Napkin Chairman

Election of J. F. Meyer, Hoffmaster Pacific Co., Los Angeles, as chairman, Paper Napkin Ass'n., together with other officers and decision to engage Farley Manning & Associates as publicity counsel marked the annual meeting of the association.

Mr. Meyer succeeds R. W. Bertram, Marathon div., American Can Co., in the chairmanship of the group. Elected as vice chairman were R. L. Fenstamaker, C. A. Reed Co., Williamsport, Pa., and B. T. Hoffmaster, Hoffmaster Co., Inc., Oshkosh, Wis. Arlo Wilson, was re-elected secretary-treasurer.

The new executive committee includes the above officers and Donald H. Krueger, Paper Art Co., Inc.; Evelyn C. Olson, Groff Paper Co.; R. W. Stevens, Milwaukee Lace Paper Co.: George Walter, American Lace Paper Co.; L. R. Watson, The Tuttle Press Co.

W. H. Chisholm Heads P. R. Program

Printing Mfrs. Reelect Officers

Five new members were elected to the executive committee of Printing Paper Manufacturers Ass'n.

N. H. Bergstrom, Bergstrom Paper Co.; D. F. McCall, Simpson Paper Co.; B. W. McEachern, The Northwest Paper Co.; E. G. Murray, St. Regis Paper Co., and A. G. Sharp, Kimberly-Clark Corp.

Other members of the executive committee elected in prior years and continuing in office are: J. R. Cryan, Fraser Paper Ltd.; P. H. Glatfelter, III, P. H. Glatfelter Co.; W. K. Graves, International Paper Co.; W. L. Jennings, West Virginia Pulp & Paper Co.; H. W. Kampf, The Mead Corp.; A. M. McBurney, Oxford Paper Co.; P. A. Mahony, Minnesota & Ontario Paper Co.; J. F. Rousseau, Finch, Pruyn & Co.; H. W. Suter, Champion Paper & Fibre Co., and W. H. Wilcox, S. D. Warren Co.

Mr. Wilcox was re-elected chairman of the association and Mr. Mahony and Mr. Kampf, vice chairmen. Other officers are Robert E. Canfield, president; Merrill R. Smeeth, executive secretary and treasurer; Albert S. Thomas, assistant secretary-treasurer.

Absorbent Paper Mfrs.

Roy A. Nash, vice president of Sorg Paper Co., Middletown, O., was elected president of the Absorbent Paper Mfrs. Ass'n. at the annual meeting in the Waldorf. He succeeds Paul H. Travis, Rochester (Mich.) Paper Co. J. J. Hallowell, president and general manager of The Wrenn Paper Co., Middletown, O., was elected vice president, and Eric G. Lagerloef was re-elected secretary-treasurer. (The organization was formerly called the Blotting Paper Mfrs. Association until last July, when the name was changed.)

R. Young, New Tissue President

Soda Pulp Mfrs. Re-elect Officers

E. H. Clapp, president, Penobscot Chemical Fibre Co., was re-elected president of the Soda Pulp Manufacturers Ass'n. at the annual meeting. Also re-elected were A. G. Paine, New York & Pennsylvania Co., vice chairman and W. M. Barrett, Mead Corp., secretary-treasurer.

Richard Johnson, of Johnson & Johnson, Jorgenson & Wettre, spoke on soda pulp marketing and potentialities in the United Kingdom and Lawrence Welch, Howard Smith Paper Mills, Montreal, spoke on Canadian markets.

Pulp Producers Elect

United States Pulp Producers Ass'n. elected regional directors and directors at large as follows:

Regional directors named were:

New England, E. H. Clapp, Penobscot Chemical Fibre Co.; Middle Atlantic, D. S. Leslie, Hammermill Paper Co.; South, F. H. Savage, International Paper Co.; Lake, R. J. Sund, Marathon—Div. of American Can Co.; West, G. J. Ticoulat, Crown Zellerbach Corp.

Directors at large are B. R. Cancell, St. Regis Paper Co.; C. H. Conrad, Rayonier, Inc.; P. K. Honey, Buckeye Cellulose Corp.; P. L. Hovey, Oxford Paper Co.; W. L. Jennings, West Virginia Pulp & Paper Co.

Also R. L. Kerridge, Riegel Paper Corp.; L. K. Larson, Weyerhaeuser Timber Co.; D. F. Morris, Mead Corp.; N. L. Nourse, Brown Co.; G. Welling Pepper, Scott Paper Co.; W. C. Shorter, Union Bag-Camp Paper Corp.; Lyall Stilp, Kimberly-Clark Corp.; Lawson Turcotte, Puget Sound Pulp & Timber Co.; J. W. Warner, Gulf States Paper Corp. James L. Ritchie, is executive director.

New Tissue Ass'n. Divisions

Two newly formed divisions of the Tissue Ass'n. held their first annual meeting during Paper Week. They are the Industrial Sanitary Division and the Resale Sanitary Division of the Association.

The Resale Sanitary Division, whose chairman is L. W. Moore, manager of the Consumer Products Division of Crown Zellerbach Corp., had as principal speaker at this meeting Donald Armstrong, vice president, McCann-Erickson and head of its market research department.

The Industrial Sanitary Division is headed by Gordon Ware, vice president and treasurer of the Straubel Paper Co., Green Bay, Wis.

The two new divisions were formed last year when the Tissue Association decided to abandon its traditional method of organization along product lines and to combine all sanitary tissue products into two divisions along the "class of customer" lines which are characteristic of its member companies' marketing operations.

Robert Young, president, Water Falls Tissue Co., was elected president of the association and Gordon Ware, vice president and treasurer, Straubel Paper Co., was elected vice president.

Rapid Progress Seen in Pollution Abatement

Twenty-five regional and area chairmen of the National Council for Stream Improvement, Inc., were told that United States pulp and paper mills are making rapid progress in their water and atmospheric pollution programs.

This information was disclosed at the joint annual meeting of the chairmen and vice chairmen of the various National Council regional groups with the members of the National Council's Operating Committee. The principal purpose of the meeting was to discuss research developments and general aspects of the pulp and paper industry's air and water pollution problems. Fred. V. Doutt, Champion Paper & Fibre Co., presided.

Dr. Isaiah Gellman, the Council's West Coast Resident Engineer, reviewed developments in that region, and Millard Robbins, Jr., outlined similar developments in the South Central region. Developments in the southern region were summarized by Herbert F. Berger, and developments in the New England region and New York section were summarized by Dr. Nicholas J. Lardieri. Middle Atlantic and Pennsylvania sectional developments were reviewed by W. E. McPherson, and Russell O. Blosser itemized developments in the Central and Lake States Region. The chairmen of the major regions spoke briefly of immediate developments in their areas concerning stream classification and pollution abatement.

Council personnel changes and additions occurring in 1958, were summarized by Dr. Gehm. Richard Brown, a chemical engineer from Louisiana State University, was appointed full-time assistant to Herbert F. Berger, Southern regional engineer; William McPherson, research engineer in the West Coast region, was transferred to the East to become regional engineer for New England and the Middle Atlantic States. Eben Owens from Oregon State College is replacing McPherson.

At the symposium moderated by William S. Wise, director of the Connecticut Water Resources Commission, six papers were presented that concerned atmospheric and liquid waste disposal problems in the pulp and paper industry.

E. Stout, public relations manager of Bowater Southern Paper Corp., Calhoun, Tenn., discussed Local Public Relations in Pollution Abatement; Dr. R. W. Brown, assistant director of Laboratories, Hammermill Paper Co., Erie, Pa., listed the Semi-Chemical Recovery Processes and Pollution Abatement methods. Dr. W. M. Van Horn, chief of Biology Group for Institute of Paper Chemistry indicated "Some Biological Factors in Pulp and Paper Mill Pollution." "Disposal of Mill Waste by Land Application and Irrigational Use" was read by Dr. Isaiah Gellman; Dr. H. W. Gehn, technical adviser to the Stream Improvement Council, reviewed the "Current Developments in Dewatering of Paper Mill Sludges." The final paper by Dr. Lardieri examined Progress in Atmospheric Pollution Control.

Paper Trade JOURNAL expects to print contexts of these papers of vital importance in the very near future.

APPA-TAPPI Forum Focuses on Research in the Space Age

Highlight of the Paper Week was the APPA-TAPPI Research Forum, a joint meeting of business and technical leaders of the industry. The theme of the Forum, moderated by John G. Strange, president of the Institute of Paper Chemistry, dealt with research as a vital need of the nation in the space age. The panel of speakers consisted of Lt. Gen. James M. Gavin, vice president, Arthur D. Little, Inc.; Dr. Howard S. Turner, vice president, Research and development, Jones & Laughlin Steel Corp.; and Alfred B. Layton, president, Crown Zellerbach Corp.

The Space Age of Paper

General Gavin, in his discussion, discerned that the time is now to start research on the commercial uses of space age technology. Reviewing the United States' economic and technological position with regard to the USSR's, he goes on to remark that "our missile and space technology is presently making a direct and significant contribution to our economy. . . . It seems unlikely that we will ever see a paper moon, no matter what the song says. And it seems unlikely that cellulose fibers will come into structural use in satellites and space ships. However, paper does play an indispensible supportive role. We could not do without it for packaging, or for information transmission, for instance.

"Paper is taking a new role in our changing economy. Even the word "paper" has changed in meaning; formerly it denoted only cellulose fibers. Today, paper contains glass, quartz, synthetics, and metals. . . . I need not belabor the fact that the uses and volume markets for paper products have changed immensly since WW II, and they will probably change even more in the space age.

John G. Strange

"The paper industry closely reflects social change. The rising standard of living at home, and the development of the so-called undeveloped nations will, initially, mean a large increase in consumption of certain paper products. This is one of the implications of the technical forecast. It is not a long range implication.

"Research has already had impact on the P & P industries in the form of competition. Quite probably, competitors will continue to rise—as the metal and plastic industries, and the USSR. In other areas, where companies are vigoriously pursuing R & D, it is quite possible they will invade the cellulose markets.

Paper—1940 to 1960

"Investment in creative research is, indeed, the only means by which the paper industry will find new markets and products in anticipation of its competitors. The precedent for this aggressive research can be seen in WW II, where paper was substituted for many materials then in short supply, and out of the research of the time, new products were born. In the space age, the vital role of paper will come from a similar effort. The tree is, after all, one of our few replenishable resources.

"The strength of P & P in our nation's war of technology and economic achievement will depend a good deal on imagination, on how well the industry keeps up with the pace of technology — how flexible it is— whether it anticipates change. The answer, by the end of the 1960's, will depend upon whether our thinking and research ends with the cultivation of present demands, the expansion of present markets—or whether we have surveyed the social and economic changes to come in the space—or research—age," Gen. Gavin concluded.

"Research expects the following things from top management," said Dr. Turner as he summarized his remarks to the forum. "Membership on the management team, with all that membership implies in the opportunity to take part in and the obligation to contribute to the formulation of policies and corporate targets; a corporate policy that obliges all members of the management team to maximize the application of new technology in all phases of the corporation's activity; an understanding of research people and the process of research so as to encourage productivity and build a soundly-based loyalty of research people to corporate objectives; a practical concept for the evaluation of research in which research is viewed as another production unit, with obligations to produce the technology on which the current strength and future growth of the company are based.

Shekels from Heaven

"If top management thinks out its goals, and understands the contribution that research-generated technology can make to those goals, then research can expect understanding criticism and proper evaluation of its performance. But in any company, when all these goals are reached, the president and the research director will have only one further subject of conversation—MONEY!"

Mr. Layton's response, "What Management Expects of Research," is reprinted in full in this issue.

The remaining guests on the panel, K. O. Elderkin, president, Bowaters Research and Development, Inc., and David L. Luke, president, West Virginia Pulp and Paper Co., opened the general discussion on the main topics. Members of the audience (about 600 strong) also engaged in questioning or commenting to the panel.

The Forum adjourned on this note when time, not interest, was exhausted.

K. O. Elderkin

TAPPI's 44th Annual Meeting Biggest Yet

TAPPI's 44th annual meeting, held at the Hotel Commodore February 23rd-26th, was marked by the largest attendance ever at a TAPPI meeting. The registration of 2700 surpassed even the previous high of about 2500 at the 1957 meeting.

Highlighting the convention, and the primary purpose of such a meeting, was the wide range of technical papers presented during the four day session. These talks, spanning the entire pulp and paper industry, ranged from forest biology through statistics and graphic arts. They ranged from the highly theoretical to fully practical applications.

The association's activities culminated at the annual luncheon on Thursday when, with W. D. Harrison presiding, G. W. E. Nicholson, president of Tennessee River Pulp & Paper Co., presented the TAPPI medal to K. O. Elderkin, president of Bowater Research and Development Inc. Named for his outstanding contributions to the pulp and paper industry, Mr. Elderkin is the 27th TAPPI medalist. Also at the luncheon, certificates were presented to past presidents. Mr. Harrison then introduced his successor, the new president, James R. Lientz, who moves up from his post as TAPPI vice president. Mr. Lientz is vice president of Union Bag-Camp Paper Corp.

Following the luncheon, TAPPI members were invited to attend a joint TAPPI-APPA Research Forum on the Starlight Roof of the Waldorf-Astoria Hotel. High point of Paper Week, the theme of the forum was "Research in the Space Age." Featured speakers were Lt. Gen. James M. Gavin, vice president of Arthur D. Little; A. B. Layton, president of Crown-Zellerbach Corp.; and Howard S. Turner, vice president of Jones & Laughlin Steel Corp.

On Friday, an open house, sponsored by the American Newspapers Publications Association Research Institute, was held at Easton, Pa., for those attending the TAPPI meeting.

J. R. Lientz
New TAPPI President

W. D. Harrison
Retiring President

H. M. Annis
New Vice President

New Post for Mr. TAPPI

R. G. Macdonald, secretary-treasurer of TAPPI has been given a newly created position in the organization with the title of assistant to the president. In his new position, Dr. Macdonald will guide and counsel the president and headquarters staff in all TAPPI activities. He will relinquish responsibility for the day to day operation of the organization with the exception of the editorship of Tappi magazine which he will retain. P. E. Nethercut, formerly assistant secretary-treasurer, has been named secretary-treasurer and will be responsible for the regular activities of the head office staff.

"Mac" or Mr. TAPPI, as he is widely known North and South and Coast to Coast, joined TAPPI in 1927 when the membership was 761 and built it to the 9300 individual members listed today. He was honored for his services in the industry with an honorary doctorate by Western Michigan University in 1952.

P. E. Nethercut joined the association as technical secretary in 1957 and was made assistant secretary-treasurer last year.

Officers of TAPPI

Election of officers was held on Monday, February 23rd. Mr. Lientz was elected president, and Harold M. Annis of Oxford Paper Co. was elected vice president. Both men will serve a one year term

Four new members were elected to the Executive Committee of TAPPI to serve for three years. They are: Walter C. Bloomquist, manager, application engineering, General Electric Co., Philadelphia, Pa.; Frederic S. Klein, mill manager, Byron Weston Co., Dalton, Mass.; Lucian G. Rolland, president, Rolland Paper Co., Ltd., St. James, Que., Canada; and Harris O. Ware, technical manager, Beveridge Paper Co., Indianapolis, Ind.

Retiring from the committee were Mr. Annis; Philip S. Bolton, assistant

R. G. MacDonald
Becomes Assistant to President

to general manager, Robert Gair div., Continental Can Co., Uncasville, Conn.; Olin W. Callighan, manager, paper sales, Minerals and Chemicals Corp. of America, Kalamazoo, Mich.; and Harry S. Spencer, mill manager, Howard Smith Paper Mills, Ltd., Beauharnois, Que., Canada.

Technical Sessions

A report on pressurized high consistency screening installations and their performance was presented by R. Cross, Pandia Div., Black-Clawson Co., Hamilton, Ohio. A. Tiriado A., Fabricas de Papel Loreto y Pena Pobre, S.A., Villa Obregon, D. F., Mexico, stated that if black liquor is properly oxidized, only three courses will produce malodors in kraft mills: gases and condensates produced by the digesters, and gas delivered by the stack of the recovery boiler. He described how use was made of the reaction between chlorine and gaseous sulphur compounds in successful installations to eliminate odors from these three sources.

J. Showalter expressed some skepticism in the high yields reported in some of the recent soda semi-chemical pulpings when he compared the "dry weight" and "consistency" methods of determining these yields. Obvious discrepancies appeared, he stated, that are dependent upon the method used. He proposed that some effort be made to standardize yield determinations, particularly as applied to semi-chemical pulping.

The final address described a statistically designed and replicated experiment to study the caustic pulping of wheat straw at various temperatures and chemical concentrations. T. F. Clark, of the USDA's Northern Utilization Research and Development Division, Peoria, Ill., submitted this paper before the session.

The acid pulping session was first addressed by S. R. Parsons of Consolidated Water Power & Paper Co., and R. Q. Boyer of Western Precipitation Corp., who recounted their experiences with the "Operation of The 1957 Experimental Sodium-Base Recovery Plant" at Consolidated W P & P Co. L. Stockman of the Swedish Central Research Laboratory in Stockholm reviewed recent developments in Swedish sulphite pulping. (See feature articles).

A group of University of Washington researchers, Messrs. H. Gaskill, R. Fleming, V. F. Felicetta, J. L. McCarthy, and M. Lung, were cooperatively engaged in the submittance of two other rather technically involved papers: Correlation of Vapor-Liquid Equilibria in the Systems SO_2-H_2O-NH_3 and SO_2-H_2O-Na_2. Using an IBM 650 Computing Machine; and Sulphite Spent Liquor: Separation of Lignin Sulphonates from Sugars in Ion Exchange Resin Columns.

Other TAPPI sessions were held on dissolving pulps, forest biology, cylinder board, fluid mechanics, adhesives testing, statistics, corrugated containers, fourdrinier graphic arts, chemical methods, chemical engineering, fresh water, chemical products, white water.

Syracuse Alumni Meet

Pulp and paper alumni of the College of Forestry at Syracuse held their 25th annual luncheon on Tuesday of Paper Week. Following the luncheon, program chairman, J. C. Barthel of American Cyanamid Co., introduced new officers of the Pulp and Paper Alumni. Slated to take over from Mr. Barthel as president

P. E. Nethercut
New Secretary-Treasurer

was Robert Becker of Riegel who was killed in a plane crash on February 3rd, 1959. Moved up to become president for 1959-60 was G. B. Nicholson, Jr., of Federal Paperboard Co. The new vice president is L. R. Ayers, Continental Can Co., and J. J. Sullivan, Lowe Paper Co., is secretary-treasurer.

Other speakers were F. G. Barber, Diamond-Gardner Corp., who introduced members of the class of 1934, and Dr. H. L. Shirley who gave the welcoming address. Guest speaker was William A. Durbin, director of public relations, American Cyanamid Co., whose speech, titled "Are We Victims of Hidden Persuaders," gave an insight into public relations techniques.

Honored at the luncheon was the class of 1934, which numbers several prominent men in the paper industry among its members. Graduates of the class were Mr. Barber; L. H. Cole, Quaker Maid Co.; A. B. Kaplan,

These millinery creations were featured at the "Paper Place" exhibit of the American Cyanamid Co. during Paper Week.

Milprint Inc.; C. M. Koon, Eastern Corp.; W. B. Morehouse, Nopco Chemical Co.; E. M. Root, Black-Clawson Co.; I. V. Earle, Kimberly Clark Corp.; Dick Cuyle and Sam Weinburgh.

Much in evidence at the luncheon was a new poster put out by the Pulp and Paper Department citing the industry's need for technical graduates. Directed at science majors, the poster points out that the curriculum stresses chemistry, physics, wood structure and chemical engineering aspects of the pulp and papermaking process.

P&P Foundation Honors Chisholm

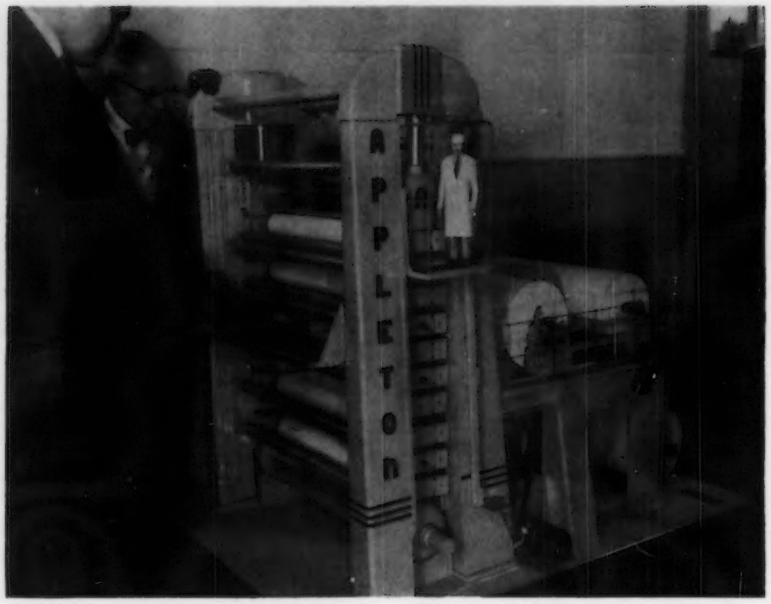
Hugh J. Chisholm, chairman of the board of the Oxford Paper Co., was named the recipient of the ninth annual Honor Award presented by the University of Maine Pulp and Paper Foundation.

The award was accepted by Mr. Chisholm's son, William H. Chisholm, in the absence of his father who was in Florida. The younger Chisholm is a member of the Board of Trustees of the university.

J. L. Ober, president of the Foundation and a retired vice president of Scott Paper Co., presented the award as one of the features of the annual University of Maine Pulp and Paper Alumni Luncheon at the Biltmore Hotel.

The citation read in part as follows: "Presented to Hugh J. Chisholm, son of the State of Maine, graduate of Yale and Harvard Universities and a member of one of the pioneer families in the paper industry. An able executive, you have won great admiration and respect through your accomplishments in the industry."

H. J. Chisholm Receives Award from Univ. of Maine



Introduced at the Tappi meeting was a one-to-six scale working model of a four-column, 12 roll supercalender made by Appleton Machine Co. It demonstrates the combined advantages of a four-column supercalender and the roll removal features of an open face stack. "Six-foot" doll illustrates relative height of new supercalender.

About 150 graduates of the University of Maine connected with the pulp and paper and allied industries were present at the luncheon. The principal speaker was Dr. Lloyd H. Elliott, president, who discussed the future needs of the University if it is to maintain its academic standing. Toastmaster was Roger A. Sullivan, who is now director of manufacturing of the Sullivan Paper Co., Inc., West Springfield, Mass.

Presentation of TAPPI Gold Medal

G. W. E. Nicholson

President
Tennessee River Pulp & Paper Co.

I am indeed very greatly honored by being asked to represent the Executive Committee and the members of TAPPI in presenting the TAPPI Gold Medal for the outstanding contribution to the technical advancement of the pulp and paper industry.

I am particularly happy and pleased to be participating on this very pleasant occasion as the medallist is a very good friend of mine. Knowing that the recipient is a very unpretentious and modest man, I am well aware that he wants me to be brief in the outline of his background and many accomplishments.

His first contact with industry after graduation was not with the paper industry but with the steel industry. He finally decided to locate a position in the newsprint industry and became a draughtsman during 1922 with the St. Lawrence Paper Mills Limited at Three Rivers, Canada. This two machine newsprint mill was built at a record speed. The building was started on June 22 and paper was made the following January.

The following year K. O. became connected with Price Bros. at Kenogami, Canada, in 1923 and in the spring of 1925 he became assistant chief engineer of the Abitibi Power and Paper Co. at Iroquois Falls, Ontario. While in Iroquois Falls, K. O. together with Russell Stearns invented an arrangement for improved circulation of water in electric boilers which made it possible to use boilers up to 13,200 volts with good results. Improvements were also made under Harry Buncke's supervision on the thermojet steam compressor system allowing steam exhaust from the engines driving the paper machines to be collected in one header and then injected into the

paper machine along with the make-up steam.

K. O. next accepted a position as resident engineer in 1928 of the Mersey Paper Mill at Liverpool, N. S.

His next move was to Corner Brook, Newfoundland, where his job was as chief engineer and eventually manager during a period of almost eight years. During this period the Corner Brook mill and power plant was extended and a number of new developments were worked out, such as a new design of draft tube and other improvements for the hydro-electric power plant.

Probably the most important move by K. O., was during 1939 when he became connected with The Crossett Co. in Crossett, Ark., and where during the early part of 1941 he took over the management of the plant. This was his first contact with kraft paper manufacture. During the Crossett period from 1939 to 1951 a great number of far-reaching developments took place, and probably the most important was the installation of the first vacuum pick-up to operate successfully on a kraft paper machine. This type of application was later applied by him in building the new newsprint mill at Calhoun, Tenn., which has made it possible to run the newsprint machines there over 2,500 f.p.m.

In 1951, K. O. left Crossett to take charge of the design, construction and the general management of the new Bowaters newsprint mill at Calhoun, Tenn. The first two paper machines started up in July and August of 1954 and these machines were the first ones built from the ground up to make newsprint using a vacuum pick-up and they established new production records. Later on a third machine and just recently the fourth machine has been put into operation.

K. O. Elderkin Receives TAPPI Gold Medal from G. W. E. Nicholson.

Among the many publicized features of the Calhoun mill, and probably the most outstanding one, is the underwater pulpwood storage. For some time before the Calhoun mill was built, the idea of storing pulpwood under water had been discussed by a group of kraft pulp and paper operators in the South but K. O. was the first one to put this idea into actual practice by designing the installation at Crossett as well as one at Calhoun. This arrangement reduces the deterioration of the pulpwood and improves the quality of the finished product.

The next move by our Gold Medallist was to head up a new organization, the Bowaters Research and Development Incorporated, with the primary object of taking over the design and construction work for Bowaters in North America, including the completion of the building of the newsprint mill at Calhoun, the building of a hardwood pulp mill there, and the building of the new 400-ton bleached kraft mill at Catawba, S. C., as well as the hardboard mill at the same site. This new assignment also includes studies and work at Corner Brook, Newfoundland, Liverpool, N. S., and other sections of the world where the worldwide Bowaters organization has interests.

K. O. has been very active in the TAPPI organization over the years and has served on the Executive Committee as well as having been vice president and president of the organization. He also spearheaded the reorganization of TAPPI in recent years.

Automatic Wire and Felt Guides

Harry W. Brown
Appleton Machine Co.
(Manager—Gilbert & Nash)

In the early years of papermaking, paper machines were run at slow speeds and hand guides were used for controlling wires, wet and dryer felts. Then in 1898, a young paper mill foreman in Wisconsin conceived the idea of an automatic guide to control the wire on the paper machine. This guide created a new principle in guiding which was practical, efficient and permitted automatic control of continuous webs.

With the advent of higher machine speeds, it became necessary to look for a guiding medium that would guide accurately at extremely high and low speeds. The mechanical guide performs satisfactorily in the medium speed range but is sometimes limited in its action on machines of variable or extremely high speeds. In order to solve this problem, pneumatic and hydraulic guides have been developed. Two basic types of pneumatic guides are now being used in the paper industry — one using an air cylinder to power the guide roll and the other a diaphragm with spring return. Hydraulic guides use an oil cylinder and a four way hydraulic valve.

On older paper machines one of the most common locations for the wire guide was on top of the wire between the last suction box and the suction couch roll. Generally, this proved to be an excellent location because here the wire was drawn up tight over the guide roll by the driven suction couch. However, one of the great disadvantages in locating a wire guide in this position is that the angle of wrap over the guide roll is always limited to the size or height of the suction couch roll. If the angle of wrap is insufficient to provide proper friction contact, the action of the wire guide is erratic and will not control the wire. The only alternative is to locate the wire guide on the wire return run, and due to higher machine speeds prevalent today, changes in design have made it necessary to move the guide down on the wire return run.

When placing a guide on the wire return, the best possible location available should be chosen. A poor location would be with the guide between the suction couch and the stretch roll. There is not enough angle of wrap and the wire coming off the driven suction couch roll is slack making it difficult to maintain good friction contact between the wire and the guide roll. In addition, the position of the stretch roll actually controls the angle of wrap.

A good location on the wire return run is with the guide approximately one-third the length of the wire from the breast roll. With the wire guide

located as close to the breast roll as possible, one of the greatest advantages is that the wire is accurately guided at the beginning of the forming area. Another excellent wire guide installation on the wire return is an inverted type guide mounted beneath the machine frame near the breast roll. This type of installation provides very accurate guiding. We always have good friction contact of the wire over the roll and usually less wrap is needed.

The distances separating the guide roll from both the carrying roll preceding and the carrying roll following are critical. In both cases, these distances should not be less than one-third the dimension of the guide roll face or more than two-thirds. Ideal distance is one-half the dimension of the guide roll face. If the available distance between the carrying rolls should be less than the roll face, it is always better to mount the guide roll slightly toward the roll preceding from the center point. Another point to consider is that the carrying roll following the guide roll should always have sufficient wrap, a minimum of 25°. Ordinarily when a guide is located on the wire return, a doctor is necessary on the guide roll. In addition to this, adequate showers should always be provided on outside wire return rolls.

Generally the same basic installation theories pertaining to wire guides also apply to felt guides. However, due to space limitations some deviations from the ideal have to be made. If it is not possible to follow the "⅓-⅔" rule, because of space limitations, the larger dimension should be between the guide roll and the carrying roll following the guide roll. Wrap angle of the felt over the guide roll should hold about a 25° minimum divided evenly as possible on either side.

Developments in Swedish Sulphite Pulping

L. G. Stockman
Central Laboratory
Swedish Cellulose Industry

The sulphite cooking process was discussed in the light of investigations made at the Central Laboratory of the Swedish Cellulose Industry (CCL) in Stockholm. The results show that sulphite cooking can be done with SO_2 solution alone in the absence of base. With a maximum digester pressure of 15 atm. (220 p.s.i.g.) the cooking time can be 5 to 10 hours depending mainly on sulphonation temperature. Lignin release under these conditions is faster than in sulphite cooking with bases. The characteristics of the pulp obtained are comparable with those of corresponding pulps prepared by conventional sulphite cooks. SO_2 cooked pulps are easily defibrated without mechanical aid at a chlorine number of 10-12 corresponding to 58-60 per cent yield. This cooking method gives more favorable conditions for a vapor phase sulphite cook since the SO_2, the only cooking chemical required, is a gas and therefore spreads evenly throughout the digester.

A sulphite cook with Na_2SO_4-SO_2 solution is in principle equivalent to an ordinary sulphite cook since the bisulphite and hydrogen ion concentrations can be made almost identical in the two cases. Cooking experiments with both paper pulps and viscose pulps showed no detectable differences in quality between pulps prepared by cooking with Na_2SO_4-SO_2 solution and by ordinary sulphite cooking.

Sulphite cooks on spruce, made with a $NaHSO_3$ solution of pH about four at room temperature, give chemical pulps, that is, pulps not requiring mechanical defibration, in yields of 58-60 per cent with excellent strength properties approaching those of kraft pulp. The author referred briefly to three Swedish and one Finnish mill which are doing two stage sulphite cooking on a regular basis.

Corrugating Paperboard – The New and Old

H. W. Wilson
Royal Container Co.
San Francisco, Cal.

During a talk delivered at a previous TAPPI session, some inherent problems that the industry is having in corrugating with modern single facers were brought out. The most significant statement was probably the amount of indention or compression of the corrugating medium at the nip point between the corrugating rolls, and that this compression of the medium combined with the larger rolls has caused impairment within the corrugating teeth, preventing the necessary flow of medium to form flutes properly.

Considerable study has been made over the last few years in regard to this indenting. It may be explained as follows: Corrugating rolls, as presently operated, in theory do not run at fixed centers, but with their centers changing. They are rolling as if they were running on a number of flat surfaces. A pair of like diameter corrugating rolls must change pitch centers in order to operate. Because of mass and rotational speed very little actual change takes place in the pitch centers, but nevertheless a compensation has to be made. This compensation takes place in the medium by compression and indenting. We term this change in running pitch center as the "drop action."

Our experience indicates that a combined drop action of .0015 inch on "B" flute to just over .002 inch on "A" flute is the minimum drop that will allow flow of the medium without impairment and that the maximum allowable drop is approximately .003 inch on "B" flute and .004 inch on "A" flute. If we exceed these maximums it appears that the drop action is so severe that the flute sidewalls are ruptured.

With a conventional corrugator it is necessary to load the top corrugating roll. With this loading and because of the drop action, the medium being a semi-plastic will indent further than necessary to compensate for the change in pitch centers. Another variable is the medium's ability to sustain a load. Further aggravat-

ing the situation, the intermeshing tooth tip of corrugating rolls is always traveling at a greater peripheral speed than that of the valley. This elongates the medium at the nip point and adds to the indenting.

By diminishing the caliper of the medium at the nip point, subsequent improvement occurs, restricting the flow of medium to satisfy the take-up factor of the flutes coming into impression. The indenting of the medium at the nip point allows the rolls to come closer together and reduces clearance in the teeth coming into impression. This then restricts the flow of the medium which will try to force the rolls apart, which requires more load to form the corrugation, which causes more indentation and so on, in a vicious circle. The result is a cause of tooth wear and nonuniformity in the finished board.

Being faced with greater quality demand by our customers,, and demand for lower cost by our owners, we were led to collaborate with S & S Corrugated Paper Machinery Co. in an investigation of a fresh approach to corrugating. This has led to the development of a new concept in corrugating.

In the new concept the valley of the top or forming roll was recessed beyond the point where it could possibly come in contact with the medium at any time. The top corrugating roll is now being driven through its tips through the paper by the valleys of the bottom or contour roll. By this means any differential in speed between the tip and the valleys as they come into contact is eliminated and consequently there is no slide action. Elimination of slide action at the contact points, eliminates wear from this aspect.

Using the new concept our calculation indicates that "A" flute rolls of approximately 24 inches in diameter are possible without sacrificing runnability. Any combination of diameters up to 48 inches could be utilized. On "B" flute this would allow rolls of 19 inches in diameter or 38 inches overall.

Some of the benefits derived from this concept are: stronger structural corrugations and a better single face bond.

The first production set of corrugating rolls using this concept which is called the WS design, went into operation December 1957. Since that time several sets have been put into operation. Royal Container Co. installed a set of "B" flute rolls in June 1958. These rolls have been carefully checked to analyze wear or any physical change. At 20 million lineal feet, the contour roll clearly showed no decrease in height and the top roll no measurable change. This indicates considerably longer life.

Since installing this new set of rolls at Royal Container, the corrugator operators now prefer to run these "B" flute rolls in preference to conventional rolls. The reasons: a more trouble free and easy operation. Operating speeds have been increased by the operators. Warp has been greatly minimized. Single face bond has been better, and there is less waste due to ease of operation.

Multiple Wire Forming

J. J. Kelly
Chief Mechanical Engineer
and

L. A. Lawrence
Research Manager
St. Anne's Board Mill Co. Ltd.
Bristol, England

An experimental machine, intended for the investigation of the manufacture of high grade folding boards at speeds considerably greater than with existing types of cylinder board machines, was built at St. Anne's in 1951. This was the original Inverform multi-wire fourdrinier which was designed for a finished width of 20 inches. The new process showed promise in quality and speed potential. From this work, a process of upward dewatering and formation was found to possess considerable advantage.

The multiple wire experimental machine has run as high as 1400 f.p.m. producing a four ply sheet and has reached 2000 f.p.m. on single ply sheet, the limit being the machine drive. A second high speed prototype single ply machine using Inverform process has been built to run at speeds up to 5000 f.p.m.

The arrangement of an Inverform unit is such that stock flows on to a bottom wire, immediately before an inrunning nip created by the top wire passing round a large diameter open faced roll known as the forming roll. The bottom wire is supported under the forming roll by large diameter table rolls, and the two wires, with stock between them, pass to the Auto Slice which is a stiff beveled scraper blade pressed lightly against the inside of the top wire. Water forced upward through the top wire, is swept up the sloping blade into the tray, from which it is returned to the pit. After the Auto Slice, further dewatering is done by inverted suction boxes, and in the case of single or first ply operation, ordinary flat boxes can be used. Finally the sheet is pressed by a rubber covered baby press roll, the bottom roll being in a suction box and the top one fitted with a suction slice.

By 1955, this process was applied to a production unit, and it was decided to replace an unsatisfactory vat section on our No. 4 machine with a four unit Inverform wet end. The press section was rebuilt to obtain maximum speed without extending the dry part.

This new wet end consists of four top wires, each served by a small flow box designed for consistencies above one per cent and fitted with a conventional adjustable top lip. The top wires are each about 40 ft. long by 140 in. wide and the main wire is 200 ft. long. The arrangement of the main wire is similar in many respects to that of a standard fourdrinier, but the top wires are novel and have posed some very interesting engineering and hydraulic problems.

The top wires each contain a number of inverted vacuum boxes and a pair of nip rolls, with a suction slice on the top side of the nips and the bottom rolls running in vacuum boxes. The complete wire part is driven by an electronic drive using magnetic amplifiers, with the forward drive roll as the master section and the couch, breast roll, main wire wash roll, and the top baby press roll in each wire having helper motors.

The machine has now been running since midsummer last year and has been kept on white lined chip, white patent coated and body board for coating with a basis weight range between 45-80 lbs. per 1000 sq. ft. and with flow box consistencies ranging between 1.0 and 1.8 per cent, according to the characteristic of the fiber.

The machine is limited in operating speed by the driving capacity, but it will dry a substance of 56 lbs. per 1000 sq. ft. at 350 f.p.m. Speeds considerably in excess of those obtained on No. 4 machine have been reached on the experimental machine and it is expected that this performance can be reproduced on a full scale machine.

This paper was prepared and presented by permission of R. J. Rhomas, chairman and managing director of St. Anne's Board Mill Co. Ltd., Bristol, England.

Sodium Base Recovery Plant

S. R. Parsons
Supv. Research
Consolidated Water
Power & Paper Co.
Wisconsin Rapids, Wis., and

R. Q. Boyer
Mgr. of Chem.
Process Dept.
Western Precipitation Corp.
Los Angeles, Calif.

Consolidated Water Power & Paper Co.'s NSSC liquor recovery plant, completed June 1958, has been operated on acid sulphite and NSSC spent liquor singly and in mixtures to obtain recovery data. Peculiar problems of design had to be resolved; for the requirement was, that the plant should be expandable to accommodate the mill's full production without suspending recovery in the experimental plant. Equipment in the experimental plant was selected to treat liquor from at least 20 tons of acid sulphite or 50 tons of NSSC on a 13:10 mixing ratio of the spent liquors.

To review, the complete recovery process involves these unit operations: (1) liquor treatment, (2) evaporation, (3) combustion, (4) separation of pure Na_2CO_3 from the smelt, (5) scrubbing the furnace gases with the Na_2CO_3 for production of cooking acid.

Sustained operation for recycling sodium sulphide gave favorable process conditions in the liquor treating system and evaporators. The chemical reaction in the oxidizer is so complete that only a trace of iodine-titratable sulphur is found in the evaporator condensates; there is no pungent odor to the condensates. This liquor appears to be no more corrosive than kraft. The forced circulation evaporator gives trouble-free operation in concentrating the liquor from 55 per cent to 65 or 70 per cent solids even when the liquor has added to it the mechanically collected soot plus salt cake equivalent to a precipitator catch.

Furnacing of the spent liquor releases sufficient sulphur and produces sufficient sodium carbonate to sustain the recovery process under widely varying conditions. Entrainment from the kraft type recovery unit, in appreciable amounts, was found to be proportionate to the square of the firing rate. Mechanical collectors were installed to control this. It is thought that excess sodium carbonate goes into the smelt unchanged. Salt cake scavenged from the flue gases or added separately is used to control the recycled sodium sulphide inventory. The salt cake goes almost quantitatively to sodium sulphide.

The furnace's shot-cleaned air heater was operable to 300°F. without difficulty. This equipment together with the forced circulation concentrator should provide an economic combination to replace the direct-contact evaporator, a large source of kraft malodors. The air heaters on NSSC units can be used as heat traps to produce 500°F. to 700°F. combustion air, making it possible to burn NSSC liquor without oil.

The green liquor is treated in an evaporator-crystallizer to yield sodium carbonate and sodium sulphide eutectic to 97.5 per cent sulphidity. Furnace dregs do not appear to affect the operation as long as they are removed in the mother liquor overflow and with the Na_2CO_3 crystals at the same rate at which they are entering from the dissolver. The combined crystals and heavy dregs are filterable on a 60-mesh rotary screen to give a 96.5 per cent pure Na_2CO_3. Washing can reduce sodium sulphide retention to less than 1.5 per cent.

Further operation of the Johnstone-designed slat-packed SO_2 absorption tower is necessary to establish the best material of construction. Unfinished Consoweld, a phenolic-based paper laminate, has been the most satisfactory material under test thus far. A pre-coated leaf filter can be used to clarify the tower effluent once it has been reduced to a pH of 5.8. Traces of ferrous sulphide above this pH markedly interfere with the filtration.

Readers are referred to two earlier articles on this NSSC recovery process that appeared in Paper Trade JOURNAL, April 30 and May 7, 1957 issues.

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Aspects of Glass Fibers As Papermaking Material

Thomas S. Chambers
Consultant
Owens-Corning Fiberglass Corp.

Over the past 21 years the use of fibrous glass in papermaking has seen various stages of laboratory experiment, pilot demonstration and mill production. Commercial development, in the name of exploring and promoting going applications, was undertaken on a substantial scale a little more than five years ago. Fibrous glass is now in a modest way, one of the paper industry's recognized materials.

Cost a Problem

Fibrous glass is derived from inorganic materials like sand which are plentiful and cheap. The cost of processing the basic raw materials into fibrous form is high enough so that the product is more expensive than the 4c-8c per pound range for purchased wood pulps. There are a great many types of fibrous glass, some of them not vastly more expensive than bleached softwood kraft, but the types useful for papermaking range upward from about 31c per pound. There is some prospect of technical developments which could lead to lower prices for papermaking grades of glass.

The present cost of fibrous glass bars it from replacing wood pulp as the principal fibrous component of tonnage papers, quite apart from technical feasibility or lack thereof. But fibrous glass has significant potentials as a component of specialty papers and converted papers, and as a pulp additive in relatively small amounts.

Specialty Applications

Reinforced paper-and-glass structures are attractive enough economically so that many non-integrated converters are able profitably to buy both paper or board and glass textile yarns, and combine them into products which find excellent reception.

There is a trend in the paper industry to increased interest in specialties, often sold in relatively low volume but at attractive margins. In the specialty field functional requirements of the product are often so exacting that raw material prices are relatively less restricted than in tonnage paper and board. For these products the cost of glass is much less of a barrier than in tonnage products, and the relatively favorable economic atmosphere makes it practical to capitalize on the unique properties of glass in fibrous form.

Commercial products in this area using fibrous glass, alone or in admixture with cellulose, include filter papers, certain electrical papers, decorative mats, saturating papers and dimensionally stable mats for use in color printing. I would like to draw your attention to the fact that the development of specialties incorporating fibrous glass offers an attractive means of participating in one of the significant business trends in the paper industry.

Operating Advantages

Anyone who has had occasion to examine the paper industry's return on investment is aware that this is a problem area. A preliminary estimate for 1958 indicates that the after-tax return on net worth for paper and allied products is about ten per cent lower than for all manufacturing. What has this to do with fibrous glass? Part of the answer to this question has already been given, in our reference to the commercially attractive fields of converted products and specialties. Another part of the answer lies in the possibility that fibrous glass may eventually enable the papermaker to produce more paper, more profitably, on existing equipment and, up to a point, defer the commitment of capital funds for new equipment so expensive that its earning power is relatively unattractive.

We have glimpses, but no sure insight as yet, into the ways by which fibrous glass may help in achieving these ends. It is recognized, of course, that material costs will require the amount of glass to be kept to a very few per cent.

It is generally observed that a little glass will produce a substantial increase in drying rate, with a significant reduction in steam cost, and greater productive capacity for machines where drying is a bottleneck. It is generally observed that cross-web shrinkage is significantly reduced by the incorporation of a little fibrous glass, with a corresponding increase in yardage per ton of pulp. For papers sold principally to caliper specification, there is often an additional increase in yardage because the density of the sheet is decreased.

Fibrous glass usually increases wet web strength, and can contribute thereby to higher machine speeds, especially with short-fibered pulps. Its effect in upgrading groundwood and hardwood pulps has logistic as well as economic significance. Its ability to increase tear strength and decrease curl may contribute to improved profit margins where these properties are worth a premium price.

Four Problems to be Solved

This qualitative view of the economic outlook for fibrous glass in papermaking is stimulating and encouraging, but there are problems—important problems—to be solved before the prospects can be realized on a substantial scale. I would like to mention four of them, and this list is not inclusive:

1. It is recognized that empirical rules for the behavior of fibrous glass in blends with chemical pulps do not always apply to groundwood blends, where there is still much to be learned.

2. Fibrous glass is often not well bonded in cellulose blends, and scuffs from the paper surface. Well coated sheets do not present this problem. Substantial progress has been made in glass-to-cellulose bonding, but more progress needs to be made.

3. Fibrous glass sometimes fractures in calendering and sometimes does not. We think we know part of the cure for this situation, but are not yet sure of the whole story.

4. Laboratory results cannot always be duplicated in the mill. We have experienced this baffling phenomenon in working with a chemical additive which very nicely counteracts the harmful effect of glass on fold in the laboratory, and fails in the plant.

I have cited these problems not to discourage the use of fibrous glass, but to draw attention realistically to the fact that more development is needed before the full economic potential becomes available to the paper industry. While details of this economic potential cannot yet be defined, the sum total looks attractive when analyzed in terms of the industry's trends and needs.

From a talk at the APPA Materials Committee Meeting.

Photo courtesy of Paul W. Cloud, Boston, Mass.

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MANUFACTURERS AND ERECTORS SINCE 1913

What Management Expects of Research And Members of Its Research Staff

A. B. Layton
President
Crown Zellerbach Corp.

I'd like to discuss some aspects of research from the viewpoint of what management of the average industrial corporation expects of research and researcher and also talk a little about research in the paper industry, with the hope that I may provoke further thinking and discussions of these subjects.

What is Research?

First of all, what management calls "research" may be quite different from research as it is regarded by scientists and technical personnel. It has been my observation that the definition of research by management will vary by industry, company and the purpose for which research is being defined. For example, in addition to fundamental and applied scientific research, some managements will consider as part of their research effort such things as market research, economic research, long-range planning, technical or process control, packaging design and development, engineering, mechanical development, capital expenditures for laboratories and other facilities, memberships in and contributions to technical and scientific associations and institutions, and fees paid for technical and research services of various sorts performed by outside agencies.

It is not my intent to discuss which of such items properly should be classified as research but merely make the point that managements of various companies are not unanimous in their thinking as to what constitutes research or their research effort.

How Much for Research?

This ambiguity is compounded when members of the investment community attempt to evaluate the relative research effort of various companies or industries in terms of annual dollars spent, or in terms of

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such dollars as a percentage of sales. For not only do the definitions of research vary, the nature of what is included in a company's consolidated dollar sales also varies—particularly in these days of consolidations and diversification. Some sales dollars properly should support scientific research—others marketing and economic research—others engineering or mechanical development research—and other sales dollars, little or no research, depending on the nature of one's business and industry.

Therefore, while dollars spent for research may give you a general idea of the magnitude of the research effort, in my opinion such figures are not a reliable basis for evaluating the relative attitude toward research between companies or industries, or the effectiveness of their respective research programs.

Furthermore, insofar as scientific research is concerned, I have always felt that the *quality* of research performed was a better criterion of a company's research effort than the quantity of research undertaken, the number of scientific personnel on the payroll or the size or appearance of a laboratory.

Therefore, in meetings with investment groups, when I have been asked the question, "How much does your company spend a year for research?" or "What percentage of your sales do you spend for research?" I have generally replied, "I'd rather not give you such a figure because it would be misleading and might cause you to draw erroneous conclusions in measuring our relative research effort and effectiveness with other companies."

For the balance of my remarks, however, I will talk of research in terms of fundamental and applied scientific research as it is generally understood. Another way of putting this is "learning work" and "applying work," in which "learning work" is concerned with the acquisition of knowledge and the understanding of nature, while "applying work" is concerned with the application of this knowledge and understanding to the output of goods and services.

Policy and Climate

For management to expect results from its research effort and the members of its research staff, it seems to me that it must first establish a policy and climate that fosters research and one in which research may flourish. For example.

1. Management should not regard research as just another form of overhead, to be turned on or off in varying degrees as a water faucet, with fluctuations in the business cycle.

2. The research program established should be a broad and sustained effort for the over-all benefit of the company and not one one beamed at limited problems or putting out fires in a given department.

3. If the head of the research function is not a part of top management, the research program should not be set up organization-wise as an adjunct of manufacturing or sales departments, but independent of them and on an equal status, reporting direct to top management.

Presented at the APPA-TAPPI Research Forum.

4. The research effort should be integrated into all the other corporate operations and not set apart as the idea department or ivory tower boys.

5. A comprehensive system of communications and follow-up should be established to make sure the results of research are disseminated and used and not sent to the files.

6. Research personnel should be given opportunities to advance into other positions in the organization, if they so desire, rather than have as their ceiling only the jobs that exist in the research effort.

7. Management should establish priorities for the various projects in the research effort rather than expect their research department to do this.

8. Management should not attempt to evaluate the results of research in the same terms of dollars and cents return on investment, or number of years required to pay out as it evaluates expenditures for capital additions.

9. Research personnel should be permitted and encouraged to exchange views with their scientific colleagues and attend and participate in meetings of scientific and technical associations.

10. The research effort should be a sincere one and not one primarily beamed at financial public relations.

Insofar as scientific research is concerned, quality of research performed is a better criterion of research effort than quantity of research undertaken, number of scientific personnel or size or appearance of a laboratory.

Management Should Expect

Once management has established a proper climate for research, in my opinion, management has the right to expect such things as the following from its research effort and members of its research staff:

First. The realization that in any industrial research department, the objective of the effort is to return a profit—not in a specified number of years as a capital investment, but in a reasonable period. An industrial research department has primarily been created and is sustained to enhance the earning power of the company—this should never be forgotten.

Second. A reasonable performance by the research department in the solution of the applied research problems undertaken. No research department should expect to have funds allocated to it indefinitely if they don't deliver.

Third. Realization that the average industrial company can only afford to have a limited amount of its research effort devoted to fundamental research. The predominant effort must be in the fields of applied research. True, companies such as Bell Telephone, General Electric and duPont do spend substantial funds for fundamental research but they are not average industrial companies. I do not mean by this that some fundamental research should not be performed or financed in other institutions. However, in my opinion, any researcher who primarily wants to engage in fundamental research should not seek employment in the average industrial company.

Fourth. Loyalty to the company in the applications of their disciplines rather than applying them in fields that are of particular interest to the researcher but not necessarily to his employer.

Fifth. Researchers should not claim or expect to receive all of the credit from the results of their research because, generally, efforts by members of the operating, engineering and sales departments also contribute to the solution and application of a research project. In Crown Zellerbach, we think of our research department as having "assisted" in the solution of a problem or in creating a new product, rather than give them the full credit.

Sixth. Researchers should realize that in asking for capital appropriations or operating funds, they are competing with all other departments in the company for which dollars are available, and that each department also thinks its own needs are the most important for the well-being of the company. Therefore, they should not feel deflated if their request is turned down or deferred, or their requested appropriation is not granted in full.

Seventh. Research personnel should take their place in a division and community the same as all other company employees in the area and not regard themselves as better or something apart from all the others. This also applies to their wives.

Eighth. Researchers should originate problems and projects as well as work on those received from others. To effectively do this, they must take an interest in and acquaint themselves with the over-all operations, problems and objectives of the company.

Ninth. Research personnel should not want to undertake every project themselves and resent participating in group research efforts or having projects or parts of projects farmed out to other qualified agencies. I am sure you will agree that one of the biggest wastes of industrial research is duplication of effort.

Tenth. Top research people should actively endeavor to lead top management in formulating the company's research program so that management is cognizant of and understands the direction and development of the industry's technology as well as the technological developments in other industries that may be applicable in the company's affairs.

None of us are yet paying the attention to research that we should if we are to not only catch up with research progress made in other industries, but keep pace with the research effort in the present economy and in years ahead.

We have Lagged

Now, as to research in the paper industry. In my opinion, our industry has lagged and is today relatively behind in its scientific research effort compared to other basic and growth industries, as well as in relation to the research potential and

need for research that exists in the paper industry. However, I think there are logical economic reasons for this.

It is generally recognized that what we today think of as industrial research first came into being around 1920. Prior to then, with a few exceptions, industrial research was primarily performed by geniuses such as Edison and Steinmetz who were supplied with laboratories and turned loose. Today's concept—where you take a group of capable scientists, but who are not geniuses, and direct their collective efforts toward the solution of definite problems — really has existed only for the past 40 years. Let's look at the paper industry in this span of years.

By 1920, the industry was established in the United States, using pulping and papermaking processes that had been developed in Europe by the Scandinavians, French and Germans. The industry substantially expanded in the 20's during which its principal scientific efforts were devoted to establishing technical control of its various processes. For example, some of you will recall the beaterman of this era who could tell much better by feeling with his hand than using instruments whether or not the stock was properly refined and the general resentment of operators to technical control of any sort. Papermaking was an art — not a science.

To me, this suggests that research in our industry has evolved from technical control and explains why some people still regard technical control as research and many companies have the direction of their research effort under their manufacturing departments.

Following this technical control era and the expansion of the industry in the late 20's, we experienced the depression of the 30's during which, until about 1937, the industry had all it could do to keep its financial head above water, much less spend money for research.

Two notable exceptions during this period were: (1) The Institute of Paper Chemistry established in 1929, and (2) Kimberly-Clark Corp. which, I have been told, sustained its research effort in lieu of paying dividends.

Research in our industry generally began to receive attention about 1937 with the business recovery. I might add, our own Central Research Department came into being about that time although it was then called the Central Technical Department, further illustrating the evolution of research from technical control. The research effort of the industry gradually expanded until the outbreak of World War II when shortage of scientific personnel and materials made it difficult for companies to sustain the research effort they had developed to date, although the Institute of Paper Chemistry did make substantial research contributions to the war effort.

Any management that neglects research will not continue to be management for very long–in fact, there might not be any company for them to manage 10 years from now.

With this background and for these logical reasons, research in our industry really only began to move forward in a substantial degree following conclusion of the War. Therefore, it is only for the past 10 years or so that the industry has really begun to implement its research effort and has had the personnel, materials and funds to do so.

Where are We Today?

So, where are we today? We have some reasonable research effort in perhaps 20 out of several hundred companies, but in my opinion, none of us are yet paying the attention to research that we should if the industry is to not only catch up with the research progress made in other industries prior, during and since the War but keep pace with the research effort in the present economy and in the years ahead.

You may say, "We're not in the chemical or electronics business," or, "Our industry is different—our products are mass-produced and there is little obsolescence," or, "Our suppliers or machine builders do the research for us." To me, these are not valid reasons for not engaging in research but excuses. In this day and age, our industry must undertake more and more research with ever increasing diligence if it is to compete with other industries and continue to grow.

Evaluating Research Effort

Although as previously stated, I don't regard dollars spent for research as a reliable basis for evaluating the relative research effort between companies or industries, let me give you a few figures of the magnitude of the research effort in this country today in support of this statement. Each of you can then relate for yourself, in whatever manner you see fit, the research effort of your company.

1. The nation's expenditures for research, including governmental expenditures, have tripled in the past decade and today are running at an annual rate of $9-$10 billion dollars. This is almost the same annual rate as total expenditures for advertising and almost the same annual rate as total sales of the paper and allied products industry.

2. Expenditures for research have been increasing at a 10 per cent annual rate whereas the over-all economy has grown at about a 3 per cent rate. (Source—Stanford Research Institute Journal, Volume 2, No. 2, Page 38).

I would like to now mention a few of the needs or fields for research in our industry as I see them.

1. Above all, there is the continuing need for research to enable us to supply the ever-changing needs of our customers.

2. We must exert constant ingenuity to enable paper to compete with other materials.

3. We must learn how to use paper in combination with chemical additives and other new materials such as metal foils and plastics as they are developed in order to develop new uses for paper.

4. If our industry is to continue its growth, we must develop new paper qualities and new and improved converted products made from paper.

5. With increasing capital costs, the cost-price squeeze, and the keen competition that exists, we must exert every research means to improve our chemical and physical processes, increase our efficiencies and innovate new concepts if we are to remain competitive and continue to grow.

6. We haven't scratched the surface of the research potential that exists in forest genetics and the growth and utilization of wood in all of its ramifications.

7. There is an enormous research potential in the utilization of all the

other raw materials we use, including substitutes.

8. With the continuing increase in distribution and material-handling costs, we must develop new, more efficient and less costly methods to move the thousands of tons of material we mass produce or use in producing and distributing our end products.

9. We must do more fundamental research or support such effort by outside agencies to better understand the molecular structure of wood, the chemistry of our pulping processes and the physical processes of papermaking.

10. We should learn how to utilize in our industry the products of research from other industries, including such things as atomic energy, electronics, plastics and metallurgy.

11. Finally, there is the tremendous research potential of learning how to use and market the other 50 per cent of the tree that we presently burn as fuel or discharge to the atmosphere or sewers with attendant stream and air pollution problems and expense. I'm thinking of the chemical by-product potential of the resins, lignins, wood sugars and other organic compounds that are in every stick of wood we process into chemical pulp but which we do not now economically utilize. Look what research has done for coal tar, petroleum and the oat hull. We have the same research potential and the opportunity to create a complete new industry and additional source of profits within our affairs without using one more pound of wood than we now bring into our mills for the manufacture of pulp.

In Conclusion

In conclusion, in the technological and fast moving age in which we are living, it is my opinion that any management that neglects research will not continue to be management for very long — in fact, there might not be any company for them to manage 10 years from now. Management, therefore, looks to the members of its research staff to see to it that the function of research is understood and not neglected, to guide it in what directions research effort is needed, and to give the resulting program proper supervision in order that the research department becomes another link in the chain of facilities, forest and people which are geared to the purpose of keeping a corporation progressive, healthy, competitive and young.

Prices of Fibers

MARKET WOOD PULP

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Delivered Basis

	U.S.	Canadian	Swedish	Finnish	Norwegian
Groundwood	$ 82.50/ 90.00	$ 82.50/ 90.00	§390.00/ —	§380.00/ —	§390.00/ —
Bleached Gw'd	$ 97.50/100.00	$ 97.50/100.00			
Kraft, Blchd.	157.00/ —	160.00/162.50	§157.00/162.50*		§157.50/ —
Kraft, Blchd. Hdwd.	152.00/ —		§137.00/ —		
Kraft, Semi-bleached.	140.00/ —	140.00/ —			
Kraft, Unbl.	117.50/125.00	125.00/130.00	†125.00/130.00	125.00/ —	
Sulphite, Blchd.	155.00/ —	155.00/ —	*155.00/ —	*155.00/ —	165.00/ —
Sulphite, Bl. Hdwd.	150.00/ —				
Sulphite, Unblchd	135.00/ —	135.00/ —	†135.00/ —	*135.00/ —	
Sulphite, Unb'l. Gl'sn		140.00/ —	†134.00/ —		
Soda, Blchd.	147.00/150.00	150.00/ —			

§ On Dock Atlantic Ports. * Freight allowed. † Varying Freight Allowances

COTTON LINTERS

F.O.B. OIL MILLS
WEEK ENDED FEB. 24

	Atlanta	Memphis	Dallas	Los Angeles
Grade	n.a.	n.a.	n.a.	n.a.
2	n.a.	n.a.	$ — /7.25	$7.65/7.40
3	$8.00/7.00	$7.50/7.00	7.00/6.50	7.15/6.90
4	7.00/5.75	6.50/6.00	6.25/5.75	6.65/6.15
5	5.75/5.00	5.25/5.00	5.50/5.00	5.90/5.40
6	5.00/4.00	4.75/4.50	4.50/4.25	4.60/4.10
7	4.00/3.00	4.00/3.50	4.00/3.00	3.00/2.75

WASTE PAPER MARKET

Mill Prices, f.o.b. Trucks Shipping Point — Includes Brokerage

These quotations are a partial indication of the price range on volume tonnage in each market on the date specified, as gathered from major dealers and brokers. SPECIAL PACKINGS AND SPOT TONNAGE NOT INCLUDED. Prices nominal.

	New York	Boston	Chicago	Los Angeles
	Mar. 2	Mar. 2	Feb.	Feb.
No. 1 Mixed Paper	$ 10.00/ 11.00	10.00/ 12.00	9.00/ —	13.00/ 14.00
No. 1 News	17.00/ 18.00	18.00/ —	25.00/ —	17.00/ 18.00
Overissue News (Lg. size)	16.00/ 18.00	15.00/ 17.00	30.00/ —	20.00/ 22.00
Mill Wrappers	19.00/ 22.00	16.00/ 18.00	12.00/ —	16.00/ —
Old Corrugated Containers	24.00/ 25.00	23.50/ 24.00	26.00/ —	24.00/ —
Super Resorted Kraft Paper	35.00/ 40.00	— / —	35.00/ —	55.00/ 57.50
New Double Kr. Ld. Corr. Cuts	35.00/ 37.50	37.50/ —	37.50/ —	35.00/ 37.00
(Semi-chem. medium)	47.50/ 50.00	45.00/ 50.00	— / —	35.00/ 36.00
New 100% Kraft Corr. Cuts	40.00/ 42.50	— / —	57.50/ —	— / —
New Br. Kraft, Env. Cuts	70.00/ 75.00	70.00/ 75.00	52.50/ —	55.00/ 57.00
New Br. Kr. Bag Waste Prntd.	55.00/ 60.00	55.00/ 60.00	52.50/ —	55.00/ 58.00
New Br. Kr. Bag Waste Unprintd	60.00/ 65.00	65.00/ 75.00	62.50/ —	58.00/ 60.00
No. 1 Groundwood Shvs.	25.00/ 30.00	22.50/ 27.50	27.00/ —	35.00/ 37.50
White Newsblanks	60.00/ 65.00	50.00/ 57.50	45.00/ —	55.00/ —
No. 1 Soft White Shvs.	60.00/ 65.00	60.00/ 65.00	55.00/ —	67.00/ 70.00
Super Soft White Shvs.	65.00/ 75.00	75.00/ 85.00	— / —	— / —
Hd. White Shvs.	90.00/ 95.00	95.00/105.00	85.00/ —	95.00/ 97.00
Hd. White Env. Cuts	105.00/110.00	110.00/115.00	90.00/ —	113.00/115.00
Col. Tab. Cards	65.00/ 67.50	60.00/ 67.00	52.50/ —	38.00/ 40.00
Manila Tab. Cards	82.50/ 87.50	85.00/ 90.00	75.00/ —	65.00/ —
No. 1 Col. Ledger	35.00/ 47.50	37.50/ 42.50	47.50/ —	32.00/ 35.00
White Ledger	60.00/ 62.50	60.00/ 65.00	57.50/ —	50.00/ 55.00
Mixed Book & Mag.†	25.00/ 28.00	— / 25.00	17.00/ —	— / —
No. 1 Books‡	30.00/ 32.50	20.00/ 22.00	35.00/ —	17.00/ —

† Includes Time & Life; no coarse groundwood. ‡ Not to exceed 10% of groundwood.

MORE THAN A MARKET

How the New European Economic Federation Can Affect U. S. Paper Exports

Charles N. Auer
President
U. S. Paper Exports Council
and Sales Promotion Manager
Champion Paper Co.

A shrewd economist once said that a person's standard of living can be gauged by how full his waste basket is. In times of prosperity, the waste basket overflows. In pinch-penny periods, scraps are hoarded. The waste baskets of western Europe are filling up—and this is a good sign for them and for us North Americans who are the chief producers and merchandisers of the contents of waste baskets!

Since the 1930's western European paper consumption has risen 75 per cent. The greater part of that increase has, of course, occurred since 1950, when the effects of the Marshall Plan began to be apparent in a rising standard of living throughout the area which World War II had ravaged of men and money.

After the war, Europe did not merely *re*build. To a significant extent, it built from scratch—it built *new*. This was true not only of architecture, but of processes of thought. A new bee began to buzz in the European bonnet. The Marshall Plan and other forms of American aid—the export not only of funds but of economic thinking and manufacturing skills — were among influences that set his bee a-buzzing.

Unity a Reality

Today the dream of economic unity is a reality. Six nations of Europe are in the process of tearing down trade barriers between them. They are creating a single area in which goods, labor and capital can flow

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freely from one section of the economic federation to another.

Geographically, the six which make up the common market—Belgium, France, the German Federal Republic, Italy, Luxembourg and the Netherlands—are far smaller than the American market. You could put the whole European common market into the states of Texas, New Mexico and Oklahoma, and still have American land left over.

But population-wise, the 165 million consumers who live in this relatively small area are very nearly our equivalent. To them, compactness is an advantage. It simplifies distribution and it decreases costs of sales and delivery. To us it offers a new kind of foreign market, with as many potential buyers as our domestic market. And although their purchasing power for paper products is currently only about one quarter of the capacity of North American consumers, it is on its way up. The American producer with an eye on the future will, of course, try to climb with it.

This is where the exporter comes in. He is, in a sense, the ladder to the top of the market. It is his business to know market trends and make the proper friends for producers. He has to know where the ladder should be pitched—and when. More than a salesman and expediter, the exporter must be the successful economist, listening-post, politician, student of history, rolled into one.

What It Means to Us

What does this growing consolidation of European economic endeavor—accompanied by new supranational political institutions—mean for the paper producers of the U. S. A.?

Does it mean greater or less demand for imports? A more open market or a more guarded one? A riskier or a safer market?

It could mean any of these things depending on how much time it has. If this down-to-earth venture can

What does this growing consolidation of European economic endeavor—accompanied by new supranational political institutions—mean for the paper producers of the U.S.A.?

Presented at the 11th Annual Open Meeting of The Export Committee of the American Paper and Pulp Association.

keep the schedule it has set for itself, despite the launchings of space satellites to its east and west—then the answers to the question of what kind of market can be given in terms of the manner in which it is exploited.

One sure-fire thing is that it is *not* a market for amateurs. It is as volatile as a rocket. In form it is new. But its roots are deep in the history of a discontented continent which has only recently come to recognize its common strength. American mill owners will do well to approach this economic phenomenon through exporters who are familiar with its genesis and aware of its goals.

The fact is that if the United States were prepared to reduce its own trade barriers on the same schedule as the common market's—we could join it. Full membership is open to any nation willing to accept the ground-rules.

Tariff Picture

If approached in this fashion, the common market offers paper producers concrete advantages. The first is a reduction in import duties which, in the recent past, have ranged from 13 to 25 per cent among the individual nations which have teamed up to form the new economic entity.

The tariff table is varied for different kinds of stock and is calculated to hit by 1970 for all of them an arithmetic mean between the lowest and highest duties in force in member nations on January 1, 1957. The reduction does not therefore mean a tariff holiday. It does, however, represent a favorable trend—and for American paper producers a fortunate fluke of fate.

Until December, 1958, this favorable trend was not expected to apply to American mills. The liberalization of trade regulations vis-a-vis the United States came about as a result of British-French disagreement.

The British proposed and the French opposed a plan under which common market members would extend reciprocal trade relaxations to countries which belong to the Office of European Economic Cooperation.

With the collapse of this plan, the Council of Foreign Ministers of the European Community cast around for an alternative method of reducing their external trade walls. The agency they chose to work through was GATT—the General Agreement on Tariffs and Trade—of which the United States is a member.

The extension of tariff reduction through GATT does not require—although it invites—reciprocal action. It is provisional only. Certain advantages in addition to tariff reduction—notably liberalization of quotas—will be reciprocally extended to OEEC members and not to the broader membership of GATT. However, the fact remains that the first trade liberalization step taken by the new common market in western Europe has established the precedent of including North America. It is a transatlantic rather than purely pan-European invitation to trade.

The precedent is important in view of the time-table for relaxation of trade barriers by the common market — and correlated predictions of paper needs of that market.

The external trade policy of the market in the coming decade will probably not be as liberal as the internal one. However, efforts already made by market members to spread the gospel of free trade make it safe to surmise that the external policy of an economically united Europe will be far more liberal than that of a nationalistic, compartmentalized Europe.

The fact is that if the United States were prepared to reduce its own trade barriers on the same schedule as the common market's—we could join it. Full membership is open to any nation willing to accept the ground-rules.

The possibility of full U. S.-Europe partnership being too Utopian to consider, the present U. S. foot-in-the-door-on-the-ground-floor, through GATT, is extremely important.

Keeping in mind the possibility of further decrease in import restrictions which would not exclude the United States, let's look at the paper needs of common market members during the projected transition to pure free enterprise across their national boundaries.

Europe's Future Paper Needs

Paper and board consumption of the market in 1957 was eight and a half million tons. It has been estimated that this may increase as much as ten per cent per year in the next decade. In fact, west German consumption is already proceeding at pace.

On this basis—and without considering an expected population increase of one per cent per year—the consumption potential of common market countries could reach 13,700,000 tons in 1962, when tariff reduction is scheduled to reach 25 per cent. By 1970, when a completely free market is envisioned, consumption could triple the 1957 figure. When the population factor is taken into account, a quadrupled consumption is possible.

Will western European production keep pace with such a demand?

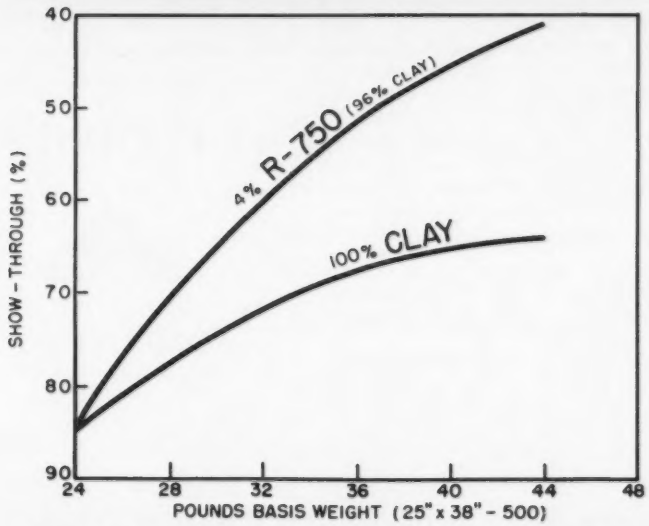
At present, the gap between production and consumption is only a little over a million tons. Imports which fill this gap come mainly from the Scandinavian countries.

The European Division of the U. S. Commerce Department's Bureau of Foreign Commerce has estimated that aggregate paper consumption in the common market will grow faster than its gross national product. Its current rate of growth is about seven per cent a year as against a projected ten per cent rate of growth in paper consumption.

Equally interesting may be an increased opportunity in other world markets where Scandinavian countries are now active, but may become less so if demands which are closer to home continue to rise for example, South America.

If the three per cent differential should continue or increase, it offers two kinds of opportunities to American paper producers; the obvious one is to compete with increasing Scandinavian production to supply the gap. Less obvious, but equally interesting may be an increased opportunity in world markets other than western Europe, where Scandinavian countries are now active, but may

HIGH OPACITY HORSE HEAD® R-750 (RUTILE) TITANIUM DIOXIDE



A lighter-weight sheet with greater resistance to show-through can be obtained by replacing only 4% clay with HORSE HEAD R-750 in the coating. The above results were obtained on a 24-lb. base stock coated one side only.

You need only moderate percentages of HORSE HEAD R-750 in your coating to obtain improved show-through resistance at lower basis weight. This means lower mailing costs for your customers.

Here's why:

HORSE HEAD R-750, having a rutile crystal structure, has a high refractive index . . . far higher than clay, even higher than anatase titanium dioxide.

HORSE HEAD R-750 is economical, too. In coated papers it provides more show-through resistance per dollar than anatase titanium dioxide.

HORSE HEAD R-750 is especially suited for use in coated papers of all types. It provides excellent color and brightness, good dispersion, low water demand, good flow properties in coating colors.

THE NEW JERSEY ZINC COMPANY

QUICK FACTS

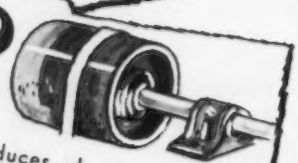
ON EXTREMULTUS BELTING

Performance-proven in over 500 pulp and paper mills

1

Won't slip or stretch. Outlasts all other belts on toughest drives. Often costs less to start with!

2



Reduces down-time and maintenance costs; improves draw control and drive efficiency.

3 Easy 2 hr. splice, completely reliable . . . and remember, no substitute can begin to compare.

Write today for interesting, descriptive catalog.

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INCORPORATED
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NEW YORK

become less so if demands which are closer to home and therefore cheaper to meet continue to rise and trade barriers continue to fall. Particularly with respect to South America, this situation warrants watching.

Build a Branch Plant?

A third method of taking advantage of the common market which has occurred to some producers is to build a branch plant in Europe. At this juncture, capital investment can be extremely risky. It takes close to three years to erect such a plant. And it will be three years before the course of common market countries can be predicted on the basis of past results. 1962 is the year when duties on all items must have been reduced by 25 per cent.

In addition to uncertainty as to the precise direction the common market will follow, there is the question of labor costs. There was a time when an American producer could figure on lower wages in European plants. That time, however, is passing. One of the effects of the common market predicted by the Economic Commission of the European community is accentuation of the present trend toward higher wages and shorter hours. Since 1953, hourly wages in common market countries have risen by percentages ranging from 22 per cent in Italy to 47 per cent in the Netherlands. The 40 hour, five day work week already exists in some industries, and will soon be accepted by more.

Three Important Hows

To get back then, to our three questions about the common market: **How open? How much demand? How much risk?**

Indications are that united Europe will be more open than divided Europe, with increased demand for paper products. It will offer American producers, working through skilled exporters, opportunity to supply either that demand, or demands of other markets, vacated by Scandinavian producers in favor of the European one. For the next several years, it can be a risky market in which to build—as against being a favorable market in which to sell.

Quite aside from these questions, however, is a question with which all of us, not only as paper men but as thoughtful American businessmen are concerned. That is: Will the common market contribute to economic stability and growth in a world where no nation can any longer escape the effects of what happens to other nations?

Specify **TEJAX**

DIAL INDICATING HANDWHEELS

for EXACT positioning of rotary or screw controlled equipment.

Applied to horizontal stems or shafts, eliminates guesswork in regulating or positioning:

- **variable speed drives**
- **distance between rollers**
- **width of gates, shutters, dampers, etc.**

Dials are visible from a distance, and are graduated in turns and fractions of a turn.

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SOUTH CAROLINA

NEWS OF SUPPLIERS

Kenneth Arnold

J. R. Lindquist

Stein, Hall & Co., Inc. Election of Kenneth Arnold as a vice president and the appointment of John R. Lindquist to the managership of the Paper & Corrugating Department has been announced by Lawrence Gussman, the firm's president.

Mr. Arnold, who joined the company in 1933, has been manager of the Paper & Corrugating Department since November 1957. Former positions with the company included the managership of the Paper Mills Department as well as of Stein Hall's Chicago Branch Sales Office.

Mr. Lindquist, who recently moved into the firm's New York Executive Offices as assistant to the manager, Paper & Corrugating Department, now becomes manager of the department. His previous assignment had been as salesman in the Chicago Branch Sales Office where he represented Stein Hall in the paper industry in Wisconsin, Illinois and Minnesota.

Buffalo Forge Co., N. Y. John H. Gregory, executive vice president of The Canadian Blower & Forge Co., Ltd., and Canada Pumps, Ltd., of Kitchener, Ontario, subsidiaries of Buffalo Forge Co., has been chosen a director of the parent company.

Mr. Gregory, who has been with the Canadian companies since graduation from McGill University in 1934, was manager of the Toronto district from 1938 to 1943, from then until 1947, sales manager of both companies.

Patton Mfg. Co. of Springfield, Ohio, will represent two German paper machinery building companies as exclusive sales agent in this country. The two German firms to be represented by Patton are: Bruderhaus Maschinenfabrik of Reutlingen, and Strecker-Bruderhaus Co. of Darmstadt-Eberstadt.

Patton will sell the Bruderhaus winder, rewinder and suction roll lines and for Strecker-Bruderhaus will handle rotary cutters, automatic pulp baling equipment and refiners. In addition to handling sales of this equipment, and a complete stock of spare parts, Patton will also perform erection services for mills and converters in this country.

The agreement between Patton and the two German firms was reached last week when representatives of the Ohio firm met in New York with A. Gayler and Erhard Kind, respective managing directors of the Bruderhaus and Strecker - Bruderhaus companies.

Niagara Wire Weaving Co., Niagara Falls, Ont., has revealed plans for a plant to be built in Quincy, Fla., for the manufacture of fourdrinier wire. The Florida company will be known as Southern Wires, Inc.

Niagara Wire Weaving Co. are important producers of wire for Canadian mills.

Yale & Towne Mfg. Co., Yale Materials Handling Division. Robert B. Brown, materials handling director of the National Retail Lumber Dealers Ass'n for the past three years, has been named a special field sales representative in the south for Yale industrial lift trucks and tractor shovels by Clyde R. Dean, Jr., general sales manager.

During his tenure with the NRLDA, Mr. Brown was responsible for the planning and conduct of extensive materials handling clinics and demonstrations in conjunction with the organization's annual exposition.

CIBA Co., Inc. William H. Kieffer and Dr. Charles J. Weidmann have been elected vice presidents, it was announced by Dr. Harry B. Marshall, president of the firm.

Mr. Kieffer, who will retain his position as general sales manager of the dyes division, came to the CIBA Co. in New York in 1950, after having been associated with CIBA Co., Ltd., in Montreal for a number of years. A graduate of Lafayette College, Mr. Kieffer also worked for the American Cyanamid Co., prior to joining the CIBA organization.

Appointed technical director of CIBA Co. Inc. in 1953, a position which he will continue to maintain, Dr. Weidmann was previously associated with CIBA Co., Ltd., in Montreal and other CIBA companies abroad. A holder of a Ph.D. degree, Dr. Weidmann was educated in Switzerland.

Chicago Testing Laboratory. The Specialties Division has been renamed Chicago Paper Testing Laboratory, Inc. During the past seven years, it has been specializing in problems related to the paper and allied industries.

Dr. Marvin C. Rogers is the new director. He is a widely known consultant to the graphic arts industries, and has been associated with the paper and printing industries for many years. Doctor Rogers is a graduate of the Universities of Min-

Meet Huyck's
McLAUGHLIN

William J. McLaughlin, more often called Bill, is Project Manager of Huyck's Needled Felt Development Section. He attended Siena College and during the past 12 years has given yeoman service in research, development, design and manufacturing at Huyck's. Bill and his group conduct an extensive and continuing study of felts for asbestos shingle and pipe operations and other related uses. Object: To maintain Huyck's leadership in this important phase of felt manufacture.

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First in Quality . . . First in Service Since 1870

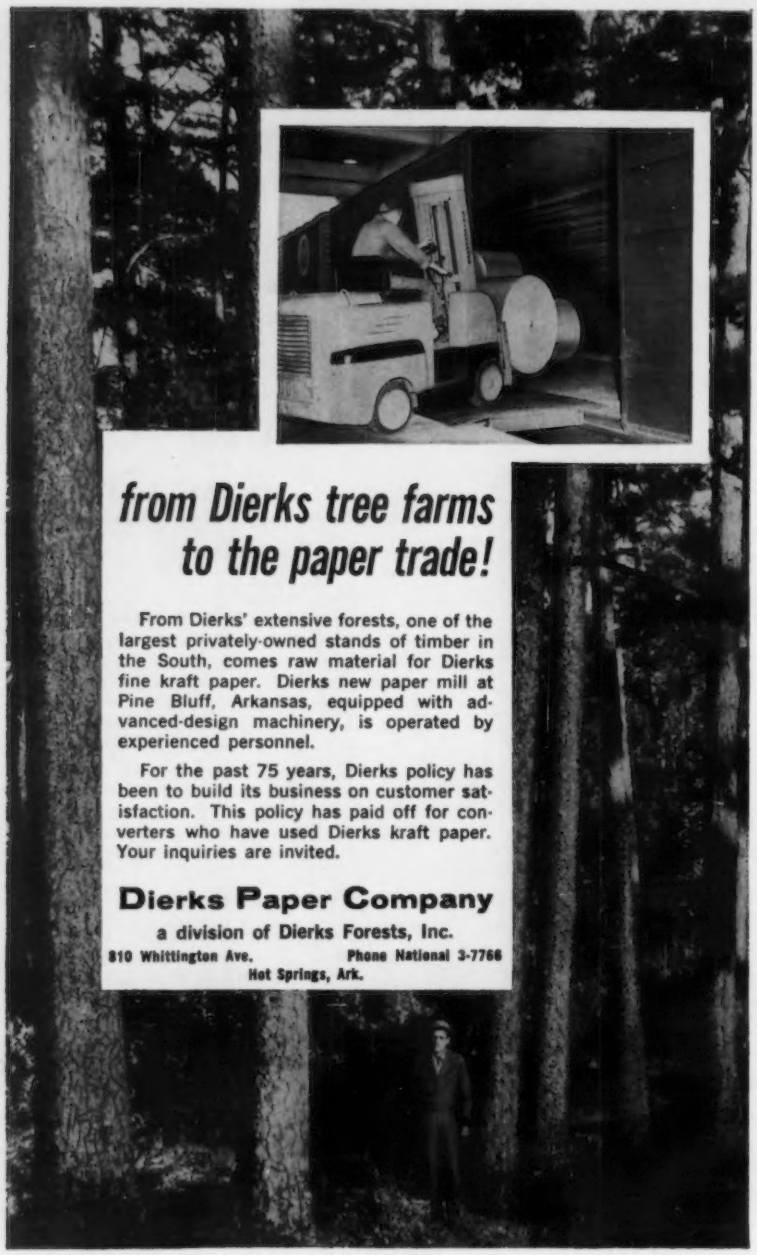
(Advertisement)

nesota and Michigan, and was formerly director of research for R. R. Donnelley and Sons Co., in Chicago.

Combustion Engineering, Inc., has acquired General Nuclear Engineering Corp., a leading nuclear engineering and consulting firm headed by Dr. Walter H. Zinn. General Nuclear will be operated as a subsidiary of Combustion.

Combustion has been active in the nuclear field for more than 12 years and has a current backlog of nuclear work amounting to approximately $50,000,000. The company has extensive facilities for the design, development, manufacture and testing of complete reactor systems, including both light and heavy components.

Huyck Felt Co., reports that continuation of felt workshops in the year 1959 has been so overwhelming that the company reports the March class filled to capacity and only a few openings for sessions scheduled for May 6, 7 and 8; June 24, 25 and 26 and Sept. 16, 17 and 18. Papermakers concerned with felt operation, who wish to attend one of these remaining sessions are urged to register promptly.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Hot Springs, Ark.

H. S. Caven

A. N. Myers

Texas Gulf Sulphur Co. Election of Hubbard S. Caven and A. Nelson Myers as vice presidents was announced today by Fred M. Nelson, chairman.

Mr. Caven has headquarters at the company's office in Houston, Tex. Prior to joining the company in 1947, Mr. Caven was a member of the law firm of Abney and Caven, Marshall, Tex.

Mr. Myers is manager of sales and operates from the New York office. He joined Texas Gulf Sulphur as assistant sales manager in 1946. From 1940 to 1946 he was vice president in charge of sales for Chilean Nitrate Sales Corp. He was previously a divisional sales manager of Virginia-Carolina Chemical Corp.

E. A. Dalmas

Food Machinery and Chemical Corp. The promotion of Edward A. Dalmas to assistant manager of the southern sales territory of Becco Chemical Division, Buffalo, N. Y., was recently announced by Albert P. Shutts, sales manager.

Mr. Dalmas, a graduate of North Carolina State College, joined Becco as a sales representative in 1956. Since that time he has served customers in the south, operating out of Valdese, N. C. He will continue his work in this area and now will also become assistant to D. Stewart Quern, southern manager.

PROVED AGAIN | ...the NEW

Figures of the Week

PAPER PRODUCTION RATIO REPORT—American Paper & Pulp Assn. Figures

(Production as per cent of normal capacity)

COMPARATIVE WEEKLY SUMMARIES

	Jan. 24	Jan. 31	Feb. 7	Feb. 14	Feb. 21
1959	90.0	88.8	89.8	87.6r	90.0
	Jan. 25	**Feb. 1**	**Feb. 8**	**Feb. 15**	**Feb. 22**
1958	91.4	86.5	87.9	89.1	90.6

r Revised.

COMPARATIVE MONTHLY SUMMARIES

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1959	87.6‡	—	—	—	—	—	—	—	—	—	—	—	—
1958	86.9	89.5	89.5	88.4	87.2	87.2	76.3	89.6	86.5	91.6	90.4	83.1	87.1

‡ Preliminary.

COMPARATIVE YEARLY SUMMARIES

	1952	1953	1954	1955	1956	1957	1958	1959
Year to Date	97.8	95.2	94.3	93.9	101.1	95.4	86.3	88.2
Year Average	88.6	92.3	91.6	94.0	97.9	90.9	87.1	—

All of the above data is based on tonnage reported to American Paper and Pulp Association. Does not include mills reporting to National Paperboard Association, except in isolated cases where both paper and paperboard are produced and separate tonnage figures are not readily available.

PAPERBOARD OPERATING RATIOS†—National Paperboard Assn. Figures

COMPARATIVE WEEKLY SUMMARIES

	Jan. 24	Jan. 31	Feb. 7	Feb. 14	Feb. 21
1959	91	92	93	94	94
	Jan. 25	**Feb. 1**	**Feb. 8**	**Feb. 15**	**Feb. 22**
1958	87	82	83	86	89

COMPARATIVE MONTHLY SUMMARIES

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1959	86	—	—	—	—	—	—	—	—	—	—	—	—
1958	80	86	88	84	84	86	76	93	90	95	92	81	86

† *Percents of operation based on "inch-hours" reported on a 6-day basis.*

SUMMARY OF PAPERBOARD STATISTICS—National Paperboard Assn. Figures

ITEM	THIS WEEK ENDING Feb. 21, 1959	LAST WEEK ENDING Feb. 14, 1959	CUMULATIVE TO DATE Jan. 1 to Feb. 21 inc., 1959
% Activity	94%	94%	91%
Total:	304,774	310,348	2,115,471
Liner	102,390	105,263	719,169
Corrugating Material	43,492	46,626	312,055
Chip & Filler Board	5,433	4,338	35,978
Total Containerboard	151,315	156,227	1,067,202
Folding	61,128	60,087	401,918
Set-Up	11,983	11,107	82,582
Special Food Board	27,598	31,300	192,641
Other	52,750	51,627	371,128
Total Boxboard	153,459	154,121	1,048,269
TOTAL ORDERS			
Received	297,549	289,084	
Unfilled End of Week	400,485	409,012	

CHAS. T. MAIN, INC.

ENGINEERS

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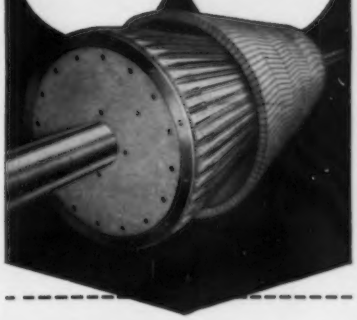
American Cancer Society

IDEAL COMBINATION FOR ANY

Conical Refiner



Jones Adapta-Plug

The completely bandless plug for *all* Jordans, the Jones Adapta-Plug is also the strongest, most adaptable, most economical plug ever made.

This revolutionary advance, exclusive with Jones, not only holds bars more securely, reduces slot wear and corrosion, but also cuts hours from the job of stripping and filling.

Before you replace another Jordan plug — ask your Jones representative about Adapta-Plug — or write us direct.

Jones FULBAR SHELL FILLINGS

Fulbar Shell Fillings eliminate keys and wedges. One piece construction fits shell body of any Jordan, simplifies handling, cuts installation time. And the patented No-wave pattern — also exclusive with Jones — has no sharp bar-ends to form strings or lumps.

For improved quality, more economical, trouble-free operation — make your next Jordan filling a FULBAR.

Rigid, one-piece FULBAR easily accommodates to inequalities in shell body of old, worn Jordans — is simpler to install, easier to grind in.

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BUILDERS OF QUALITY STOCK PREPARATION MACHINERY

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More than 1500 DeZurik Pipeline Stock Consistency Regulators are proving their superiority every day in mills throughout the country.

DeZurik Pipeline Regulators can be installed at any convenient location, regardless of elevation. They operate on total capacity—not just a sample of stock!

DeZurik Regulators are also available in Open or Pan types.

Write for details and recommendations.

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Announcing the NEW

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Using the proper alloys with precision machined knife gate construction.

Check these ECONOMY advantages:

- √ **Highest strength ratio to weight.**
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- √ **Operated by hand, air cylinder or motorized.**

Write for NEW Bulletin #100 describing the complete line of ECONOMY stainless stock valves for the process industries.

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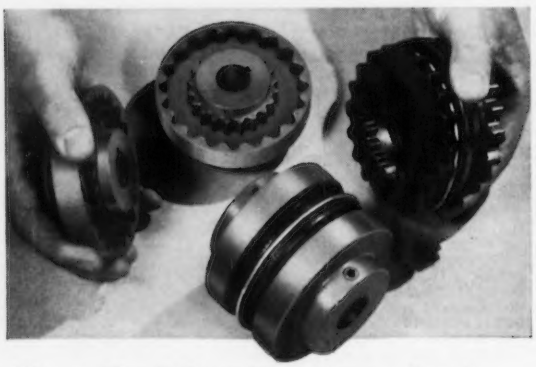

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Unique design and 4-way flex enable Wood's "Sure-Flex" Couplings to absorb not only all types and combinations of misalignment and end-float . . . but up to 15 times more shock and vibration than other leading flexible couplings. Only four basic, easily installed parts. No clamps or screws. No wear, no lubrication or maintenance. Unaffected by abrasives, dirt or moisture. Operation is noiseless. WRITE FOR BULLETIN 10100A.

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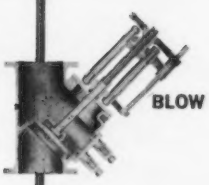
For more than 50 years Magnus Metal has been specializing in custom-built valves for the paper-making industry. These valves are designed and built to meet your exact requirements, whatever they may be — for any of the following types: Blow, Gate, Globe, "Y", Swing Check or Safety Pop.

All Magnus valves are built with the extra precision that means extra dependability and longer, trouble-free service. Readily available replacement parts for all valves assure minimum down time and low maintenance costs. Describe your valve problem and let us give you our solution.



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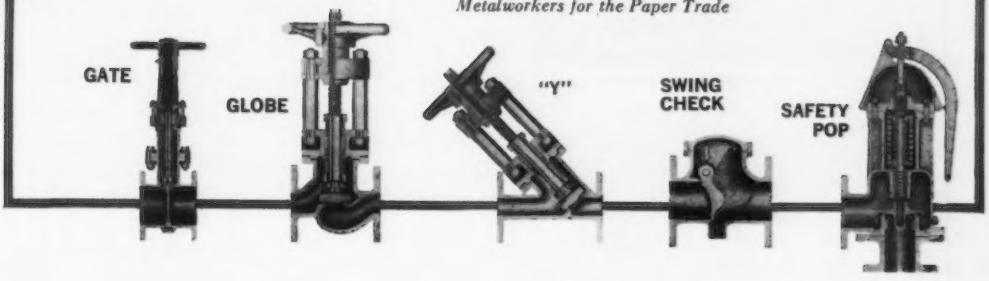
Subsidiary of **NATIONAL LEAD COMPANY**
Fitchburg, Massachusetts
Metalworkers for the Paper Trade



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New! single or double-end
SEWING MACHINES
with New "tape-over" sewing feature

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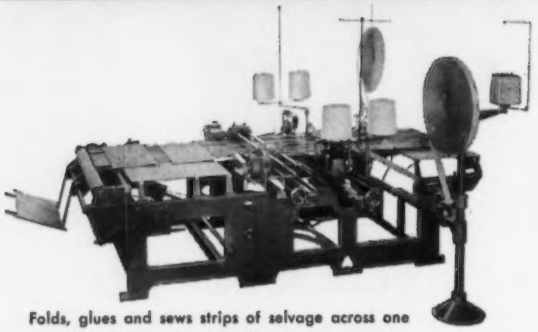

Folds, glues and sews strips of selvage across one or both ends of multi-wall tubes in one operation. Equipped to do "tape-over" sewing (selvage pasted over stitches rather than stitches going through the selvage). Can also do regular sewing (through selvage).

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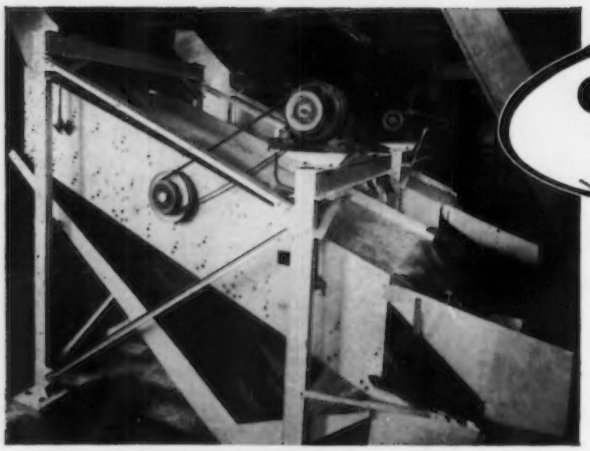
Designers and manufacturers of equipment for Bag Making, Printing, Coating, Laminating, Gluing and Labeling.



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THE COWAN CENTRIFUGAL PULP SCREEN

Available in three sizes:

Mark "A," Large

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For all types of Pulp and with Components made from alloyed materials to suit.
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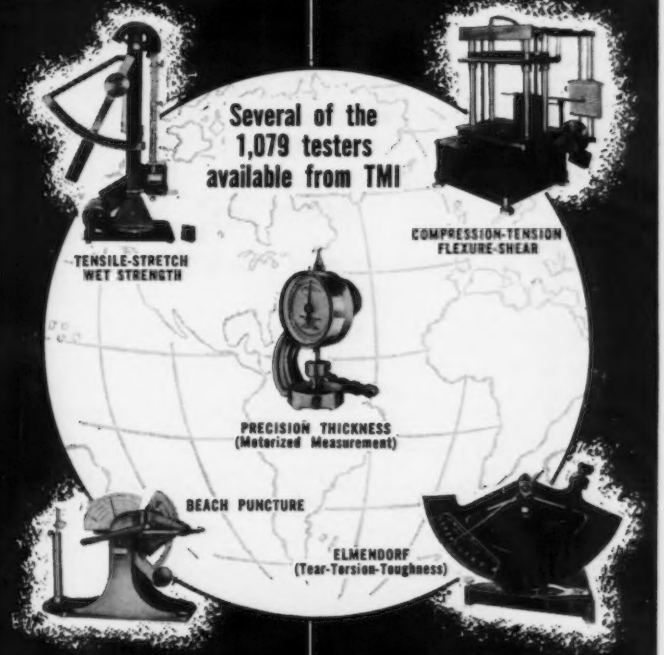

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M-9

WANTED

PERSONNEL, INDUSTRIAL AND PUBLIC RELATIONS MANAGER for pulp and paper company which is building a 500-ton per day average kraft pulp and linerboard mill to be located at Counce, Tennessee. Among qualifications required are: Thorough knowledge and extensive experience in personnel and industrial relations work from Southern kraft pulp and paper industry; age between 35 and 50; should be well informed about labor organizations and negotiations. Will report directly to local officer in charge of complete operation. Position has excellent growth opportunities. Applications will be treated confidential. Only well qualified applicants will be considered.

TENNESSEE RIVER
PULP & PAPER COMPANY
230 Park Avenue, New York 17, New York
M-9

Help Wanted

SOUTHWEST UNBLEACHED KRAFT PAPER AND BOARD MILL PLANNING EXPANSION NEEDS:

PLANT ENGINEER — Graduate engineer up to age 40 with paper mill experience as Plant Engineer, Assistant Plant Engineer, Power Superintendent, or related positions. Should be familiar with paper mill planning, operations, and maintenance. Expanding opportunities. Salary open.

Also young graduate engineers with some experience in paper mill engineering are needed.

Applicants for above should submit data sheets covering personal history, educational background, and specific job experience to Box 59-67 care Paper Trade Journal.
M-9

WANTED

Chemical Engineer of Chemist with paper experience for applications and technical sales work with company selling adhesives to the coated paper trade. Excellent position with well-established company; located Middle West. Please send full resume to Box 59-58 care Paper Trade Journal.
M-16

WANTED

Machine Tenders and Back Tenders

for combined Fourdrinier Pick Up Machine with Pre-Driers and Yankee Attachment.

Machine is a Beloit Unit producing light weight paper at high speeds

Experience at operating such machine with Pick Up or Straight essential

Excellent salary and living conditions on contract basis for qualified personnel

Contact:

AMERICAN ISRAELI PAPER MILLS LTD.

P.O.B. 142 Hadera, Israel

M-16

PAPER CONVERTING MACHINERY DESIGNER

Wanted by manufacturer of paper and film bag machinery and printing presses.

Located in pleasant New Jersey community.

Degree not necessary—only the ability and practical background for independent design of converting machinery.

Excellent opportunity for capable man. Salary open.

Please send resume of experience. Box 58-13 care Paper Trade Journal.
TF

LAMINATING MANAGER

One experienced in board to board, paper to board, grease proof to board, wax and adhesive laminants. Modern plant. Excellent working conditions. Excellent salary and benefits. Write complete resume of education and experience. P. O. Box 59-80, care Paper Trade Journal.
M-16

ROSS PAPER MACHINERY CO.

USED PAPER MAKING AND CONVERTING MACHINERY

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Cable Address "JACKROSS Newark, NJer"

QUALITY GUARANTEED MACHINERY ERECTED FOR YOUR INSPECTION

BEATERS—CAST IRON TUBS
1—25 lb Valley Iron Works
1—750 lb Valley Iron Works; 38" x 48" roll
6—1500 lb Dilts; 50" x 52" bandless rolls

CALENDER STACKS
1—82" Lobdell 5 roll
1—86" Lobdell 5 roll
1—86" P & J 7 roll
2—115" B-C 7 roll
1—118" B-C 7 roll w/hydraulic loading
1—124" B-C 5 roll
1—124" B-C 6 roll
1—128" Downingtown 7 roll

CHIPPERS
1—96" Murray 6 knife; A-F Brng.

CONVERTING MACHINERY
4—30" Thermo Pressure Sealing Machines
1—36" Printed Web Gillis Dryer
1—42" Knowlton Core Cutter
1—60" Knowlton Tube Roller
1—72" Hudson Sharp Laminator
1—CECO Case Sealer; like new
1—Spiral Tube Winder w/automatic cut off and electric eye
1—Lawtomatic Roll Wrapper

CYLINDER MOLDS
2—63" face x 36" dia w/rubber couches
1—72" face x 48" dia
1—73" face x 48" dia
1—92" face x 30" dia
1—102" face x 36" dia
2—104" face x 36" dia
1—107" face x 48" dia; A-F Brng
2—111" face x 36" dia; A-F Brng
1—132" face x 36" dia; A-F Brng
1—132" face x 42" dia; A-F Brng
1—136" face x 54" dia; SS covering

DRYERS—HYDROSTATICALLY TESTED

16" Dia.: 2—46" face w/Accessories
18" Dia.: 1—90" face w/A-F Brng
24" Dia.: 38—46" face; Chrome plated
28" Dia.:
3—70" face w/gears & bearings
3—73" face w/gears & bearings
3—76" face w/gears & bearings
3—77" face w/gears & bearings
2—84" face
2—84" face w/accessories
2—160" face w/rope carriers
36" Dia.:
1—42" face
2—44" face
2—46" face
4—70" face w/gears & bearings
11—72" face w/gears & bearings
1—74" face Lukenweld w/A-F Brng
1—74" face w/gears & bearings
5—75" face w/gears & bearings
9—76" face w/gears & bearings
1—77" face w/gears & bearings
1—78" face w/gears & bearings
2—80" face
5—84" face
18—90" face; complete section
1—92" face
1—138" face
10—160" face
42" Dia.:
20—78" face; complete section
1—106" face
1—110" face
1—120" face
1—160" face
48" Dia.:
58—46" face; chrome plated
1—52" face w/gears & bearings
1—82" face w/gears & bearings
5—90" face w/gears & bearings
4—94" face
10—100" face w/bearings
25—110" face w/frames & bearings
12—123" face w/gears, frames & bearings
1—128" face
1—130" face
14—160" face

CYLINDER WET ENDS
1—99" face x 48" dia Downingtown single cylinder; 18" dia couch
1—106" face x 36" dia. B-C 5 cyl.; 18" dia. couches; 7 sets of presses
1—132" face x 36" dia Beloit seven cylinder; 18" dia couches & four sets of presses

EMBOSSERS
1—80" Hudson Sharp; A-F Brng
3—62" Textile Machinery Co.; complete

EXTRACTOR ROLL
1—134" face x 24" dia Downingtown w/18" dia rubber couch

FILTERS—STEEL VATS
1—6' face x 3' dia Dorr-Oliver
1—10' face x 8' dia Dorr-Oliver continuous

FLAT SCREENS
2—12 Plate IMPCO w/braemer controls

FOUDRINIER WET END
1—106" Valley complete from head box through 22" dia. suction couch

INLETS & HEADBOXES
2—86" Valley Iron Works
1—102" Valley Iron Works
1—112" Shartle S.S. w/hydronamic adjustable inlet
1—144" B & S high speed w/headbox; SS clad
1—156" New Valley w/36" headbox; monel lined

JORDANS
2—Appleton #1 w/A-F Brng
2—N & W Peny w 75 h.p. motors

MOTORS—3 PH. 60 CYCLE
1—100 hp GE; 440 v; 695 rpm
2—100 hp GE; 440 v; 430 rpm
1—350 hp GE; 2200 v; 720 rpm: Synch

PUMPS
1—10 x 20 Shartle Triplex
Various open & inclosed impellor centrifugal

REELS
1—86" Downingtown two bowl
1—94" Downingtown two bowl; 60" dia rolls
1—100" Kohler automatic to arm unwind reel; 60" dia rolls; new condition
1—150" B & S pope type w/Reliance drive

REFINERS
2—#1 Claflin; A-F Brng
1—#1 Dilts Hydrafiner w/motor & S.S. filling
1—24" Downingtown Weiner; new
1—F24 Bauer w/50 hp motor

ROLL GRINDERS—COMPLETE W/MOTORS
1—208" x 32" Farrel w/crowning device

ROTARY SCREENS—BIRD
10—#3A, Model 100 w/SS or copper vats

SAVEALLS
2—#5A Bird w/motors

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1—64" Dillon
1—80" B-C heavy duty board model
1—87" Hamblet w/backstand & layboy
1—157" Masson-Scott; like new

SHEETERS—SINGLE KNIFE
1—36" Beck w/layboy & Elec. Eye
1—60" Hamblet w/backstand
1—65" Kidder w/elec. eye and layboy
1—67" Hamblet
1—71" Hamblet
1—78" Hamblet w/layboy & motors
1—82" Hamblet w/layboy & backstand
1—105" Hamblet w/backstand & motor
1—110" Hamblet w/layboy
1—124" Cameron quick change slitter assembly

SLITTERS & WINDERS
3—12" Schultz Types AS & LDX
1—42" Essex duplex; 30" dia rewind
4—42" Cameron Model 6; 24" dia rewind
1—42" Cameron Model 40-1A; 22" dia rewind
2—48" Langston duplex; 24" dia rewind
1—50" Cameron Model 6; 24" dia rewind
1—52" Cameron Model 24-2A; 18" dia rewind
1—60" Hudson-Sharp; plastic coated paper
1—60" Langston; shear cut; 30" dia rewind
1—60" Kidder Model SH; 40" rewind
1—62" Cameron Model 9-5; 24" dia rewind
3—62" Cameron Model 6; 24" dia rewind
1—62" Cameron Model 8; heavy duty
1—62" Cameron Model 6; 30" dia rewind
1—62" Cameron Model 6; new 1951; 24" dia re.
1—64" Cameron Model 8; 36" dia rewind
1—62" Johnstone Model 12; Reliance Drive
1—64" Johnstone Type 5—duplex
1—70" Center Winder w/variable speed motor
1—72" Cameron Model 26-3A duplex
1—72" Beloit shear cut; 40" dia rewind
1—72" Hudson-Sharp high speed automatic
1—82" Langston Shear cut; 50" dia rewind
1—86" Cameron Model 8-10; 48" dia rewind
1—102" Langston Shear cut; 60" dia rewind
1—110" Cameron Model 18; 60" dia rewind
1—124" Cameron quick change slitter assembly
1—136" Langston Type DA; A.F. Brng; 60" dia rewind
1—148" Langston shear cut; A-F Brng; 60" dia rewind
1—194" Cameron Model 19; A-F Brng

STEAM TURBINE—PAPER MACHINE DRIVE
1—100 hp DeLaval w/reducer

STOCK CLEANERS
2—1000 g.p.m. Shartle Hydrafuges w/motors
21—Bird Dirtecs; 2" & 6" bronze

SUCTION COUCH ROLLS
1—108" drilled face x 22" dia Sandusky
1—116" drilled face x 18" dia Sandusky
1—122" drilled face x 18" dia Sandusky
1—122" drilled face x 25" dia Sandusky
1—135" drilled face x 22" dia Sandusky
1—192" drilled face x 30" dia Millspaugh

SUCTION PRESS ROLLS
1—90" drilled face x 18" dia Sandusky
1—98" drilled face x 18" dia Sandusky
1—166" drilled face x 19" dia Millspaugh; used 2 mos; A.-F. Brng; rubber covered
1—194" drilled face x 30" dia Millspaugh

SUPERCALENDERS
2—30" Norwood 4 roll
1—63" Norwood 8 roll; A-F Brng
1—65" Norwood 8 roll; A-F Brng
1—92" Norwood 7 roll w/drive

THICKENERS
1—92" face x 36" dia cyl w/rubber couch; less vat
6—132" face x 36" dia cyl w/16" dia rubber couches; A-F Brng
1—132" face x 42" dia cyl w/16" dia rubber couch; A-F Brng

TRIMMERS—POWER BACK GAUGES
1—74" Seybold 20th Century
1—84" Seybold 12Z w/motor & air table
1—84" Seybold Dayton w/motor
1—94" Seybold Precision w/motor & air table

VACUUM PUMPS
2—H-4 Nash w/10 hp motors
1—L-4 Nash
1—L-5 Nash
2—H-8 Nash
4—#2, #3, #4 & #6 Nash Hytors
1—7 x 10 Connersville

YANKEE DRYERS
1—132" face x 10' dia Beloit; 35 psi

WAXERS & COATERS
1—54" Mayer w/motor
2—62" Mayer w/motors
1—65" Mayer w/drive
1—76" Mayer w/Dowtherm system

Help Wanted

ROTOGRAVURE PRINTING AND INK SPECIALIST

Progressive midwestern firm specializing in flexible packaging and folding cartons desires person experienced in gravure printing, ink and lacquer blending, formulation and testing. Other desired qualifications include abilities to manitain accurate records and to communicate results.
Salary commensurate with qualifications and experience. Send resume to Box 59-86 care Paper Trade Journal. M-9

MACHINE TENDER

For small Fourdrinier machine running Towel and Napkin grade, located Bloomfield, N. J. Steady work—Liberal Co. Paid Benefits. Reply promptly stating experience, age and salary expected to Box 59-83, care Paper Trade Journal. M-16

New England concern desires manufacturer's representatives or agents with good paper mill contacts on all types of rolls in PenJerDel area and southeast.

Rodney Hunt Machine Co.
Industrial Roll Division
Orange, Mass. M-9

Situations Wanted

Mr. Pulp Paper President

Mill—Merchant—Broker—Converter

Desire opportunity as assistant to top executive. Thoroughly seasoned production, sales, end uses. Outstanding sales record selling Printers, Publishers, Converters. Experienced blending pulps. Mid thirties. Pulp & Paper degree. Income secondary to opportunity & future. In NYC for NPTA convention. Address Box 59-85 care Paper Trade Journal. M-9

PAPER MAKER

30 yrs. experience on both Fourdrinier & cylinder machines on all grades of paper, also stock preparation. Tour Boss and Felt Mill Supt. experience. Age 50. Desires Tour Boss on all grades of paper making or Felt Mill Supt. job. Available. Write John Birchfield, 602 Benton St., Joliet, Ill. M-9

BOARD MILL CHEMIST

Married, with family. Available immediately. Experienced in mill operations, furnishes, refining, color matching, coatings, printing, new product development and quality control. Box 59-29 Paper Trade Journal. M-23

PROJECT ENGINEER—College graduate, 20 years experience in Engineering, Forestry and Mill Operations. Employed. Will supply resume and excellent references. Address Box 59-87 care Paper Trade Journal. M-30

Situations Wanted

PRACTICAL PAPER MAKER with Top Management training as Plant Manager, Gen. Superintendent and Superintendent. Can do anything. Go anywhere. Will travel. Address Box 59-78 care Paper Trade Journal. M-16

PAPER MILL SUPT. wishes change. Will go any part of world, prefer tropics. Very thoroughly experienced on all Fourdrinier grades, colors and pulps. Write Box 59-73 care Paper Trade Journal. M-16

For Sale

FOR SALE
IMMEDIATE DELIVERY
LOCATED—PHILADELPHIA, PA.

1—90" Yankee Fourdrinier Machine. Equipped with Suction Press, Head Box, Voight Inlet.

1—6 Ft. Lukes Steel Yankee Dryer—150# Test.

1—5 Ft. Moore & White Yankee Dryer.
The above two dryers are fully equipped with doctors, Honeywell speed indicators and air cylinders with Foxboro controls. All rolls (felt & wire) equipped with A.F. Bearings. Direct Motor Drives. Excellent Condition.

2—Coilators.

1—#1 Claflin Refiner.

1—75 KW MG Set with Controls.

2—Embossers.

3—Beaters.

2—Savealls.

Many other items, including pumps, motors, laboratory equipment, etc.

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GOUVERNEUR, NEW YORK
Telephone 333-334 TF

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IMMEDIATE DELIVERY

1—Farrell Roll Grinder, 30" Diameter x 130" Face. Complete. Excellent Condition.

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GOUVERNEUR, NEW YORK
Telephone 333-334 TF

FOR SALE

One Farrel Roll Grinder, capacity 28" dia. x 150" face. Will grind straight or crown. For further details write Sandy Hill Iron & Brass Works, Hudson Falls, N. Y. Attn. Mr. L. G. Gallup. M-9

Buy U. S. Savings Bonds

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IMMEDIATE DELIVERY

1—128" 8 & S 10-Roll Calender Stack. King Roll 24" Dia. Heavy box frames, full set of doctors. Excellent Condition.
1—86" Farrel 8-Roll Calender Stack. Anti-friction Bearings. Excellent Condition.
26—36" x 72" Complete Dryer Section, Stack, Drives, Etc.
10—48" x 150" Pusey & Jones Dryers.
1—84" Kamyr Machine, Complete. 75 ton per day output.
1—E. D. Jones Majestic Jordon No. A-482. New S.S. Fillings. Like New.
1—E. D. Jones Imperial Jordon, S.S. Fillings
1—Noble & Wood Mammoth Jr. Jordon, S.S. Fillings
1—Monarch Jordon, Model SP, Serial #21095, no fillings. Direct connected to a 75 H.P. G.E. 400 RPM Motor.
1—No. 3 Jones Pulpmaster, Late Type. Complete Drive.
1—Dilts #1 Hydrafiner, Anti-friction Bearings.
1—45" Seybold-Dayton Trimmer and Cutter with 5 H.P. 220/440 Volt Motor.
1—A.P.P. Rotary Centrifugal Pulp Screen, 40" Dia. x 42" Face. Serial #1274227. Like new. Capable of 40 ton groundwood pulp per day.
1—Trimbey Senior Rotary Screen.
2—Impco Rotary Pulp Screens.
3—No. 3 Impco Rotary Knotter Screens. S.S. Plates.
1—110" Pusey & Jones 2-Drum Winder. A.F. Bearings.
1—Hudson Sharpe Toilet Tissue Converting Machine. Ser. #2123. 8 Spare Mandrel Bars.
1—42" Dia. x 110" Face Pope Type Reel. Excellent Condition.
1—25" Dia. x 156" Face Sandusky Suction Couch, Bearings & Stands.
1—22" Dia. x 138" Perforated Face Sandusky Suction Couch, Bearings & Stands.
1—10-Knife Carthage Chipper with Anti-friction Bearings.
1—54" Dia. x 48" Face Valley Iron Tub Beater.
1—Dilts 53" Dia. x 60" Face—2000 lb. Iron Tub Beater. S.S. Extractor Type Hood.
1—Seybold Knife Grinder. Size G, 84" Table. Serial #4X802.
1—Sandy Hill Sulphur Burner. Complete.
2—#2 Bird Screens with Copper Vats & S.S. Plates.
1—Tugboat Annie Pulper.
1—Worthington Air Compressor, Model 5TR2. 2-Stage, Air Cooled. 5 H.P.
1—C.P. 12 x 10 Air Compressor, 100# Pressure.
1—I.R. 7 x 7 Air Compressor. 100# Pressure.
1—No. 244 Mattison 18" Core Cutting Saw —5 H.P. 3450 RPM, 3/60/220-440 volt.
1—90 H.P. Terry Turbine, Type G-4000/1000 RPM. For Paper Machine Drive. Complete.
1—No. 2 Jones Pulper. A.F. Bearings. Spare Worm.
1—36" Putman H.D. Lathe—15' Centers.
1—24" x 6' L & S Geared Head, H.D. Machine Lathe. Taper Attachment, Hollow Spindle, Motorized.
1—A.C. 75 H.P. 3/60/220-440 Volt, 720 RPM. T.E.F.C. Type ARZX Motor.
1—A.C. 60 H.P. 3/60/220-440 Volt, 720 RPM. T.E.F.C. Type ARZX Motor.
1—G.E. 100 H.P. MG Set, 250 Volt D.C.
1—250 H.P. Ingersoll Rand Diesel Engine Generator Set—G.E. Generator, 150 KW, 480 Volts, 720 RPM.

Save over 50% on your requirements for New Jordon Fillings. S.S., Bronze & Carbon Steel.

Gear Reducers, P.I.V. Drives, Generators, S.S. Pumps, Stock Pumps, Plunger Pumps, Etc.

1000 Electric Motors from ¼ H.P. to 600 H.P. in Stock.

The above is but a small part of the inventory we carry. We can furnish you with almost anything in the line of paper mill, electrical and machine shop equipment.

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50" trim, 3 cylinder Board Machine.
Complete with Stock Preparation Equipment and Modern Boiler.
Produced 15 tons of .009 Corrugating or .018 Chip Board per day.
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BY VALLEY IRON WORKS

Consisting of: 1½ lb. beater with motor and drive, 8" x 8" sheet mould, hydraulic press and electric sheet dryer. All in excellent condition.

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M-16

FOR SALE—One Eaton Debarker with extra head. Excellent condition. Warren type 4K-12 Pump used as high pressure water pump, also available. Can be inspected. Reply Box 59-74 care Paper Trade Journal. M-9

Wanted

WANTED

Will buy for cash—paper co. with tax loss over past three years. Strictly confidential. Box 58-333 care Paper Trade Journal. TF

For Sale

FOR SALE

106" B&C 5 CYLINDER BOARD MACHINE

5 CYLINDER WET END COMPLETE; 5 SETS PRIMARY PRESSES; 2 SETS MAIN PRESSES; 48-DRYERS 42" DIA. COMPLETE SECTION; 1—7 ROLL CAL. STACK; 2 BOWL REEL; SLITTER & REWINDER; PUMPS; DRIVES; MAIN MACHINE DRIVE.

ERECTED FOR INSPECTION

CAN FURNISH 106" FOURDRINIER SECTION IN PLACE OF CYLINDER WET END.

FULL SPECS AND PHOTOS ON REQUEST

ROSS PAPER MACHINERY CO.
265 PASSAIC ST.
NEWARK 4, N. J.
HUMBOLDT 2-2177

TF

Wanted

WANTED

30 dryers 48" diameter x 88"-95" face or 38 dryers 36" diameter x 88"-95" face, with frames, gears, bearings.
Number Six Nash pump.
Number Two Emerson plain bearing Jordan for belt drive.
Number One Miami Jordan, plain bearing, for direct drive.
Address Box 59-82 care Paper Trade Journal.
M-16

Business Opportunity

ATTENTION PURCHASING AGENTS and TRAFFIC MEN

Of Waste Paper Consuming Mills in a radius of 150 miles of New York City. We would like to sell all grades of Waste Paper and haul back your finished product on a contract basis.

All replies held in strict confidence. Address Box 59-43 care Paper Trade Journal.
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Wanted

WANTED

1—Used Keese Perfect Seal Press. Any size. Please send full particulars to Box 59-84 care Paper Trade Journal.
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PAPER TRADE JOURNAL BUSINESS STAFF

New York 36, N. Y. 49 W. 45th St. Plaza 7-2370

Arthur E. Gordon, Business Mgr.

Frederick B. Grosse, Production Mgr.

Francis J. Gordon — Alrick Man

CHICAGO 3, ILL.: H. K. Vinton
Room 1020, 79 W. Monroe St. CEntral 6-2784

PITTSBURGH 11, PA.: H. L. Poulton
610 Pennridge Road. HEmlock 1-1571

MIAMI, FLA.: Hal Moore
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625 Market St. YUkon 6-0647

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404 Times Bldg. CA 2-5146

HOUSTON 6, TEXAS: F. Vickrey
Room 214, 3217 Montrose Blvd. JAckson 9-6711

SEATTLE 4, WASH.: H. Abney
1008 Western Ave. MA 3-3766

Foreign Representatives

GERMANY: Herbert Morgenbesser
Kohlgarten 3, Hamburg—F. U. Phone: 59-82-08

UNITED KINGDOM: H. R. Vaughan
Publishing & Distributing Co., Ltd.
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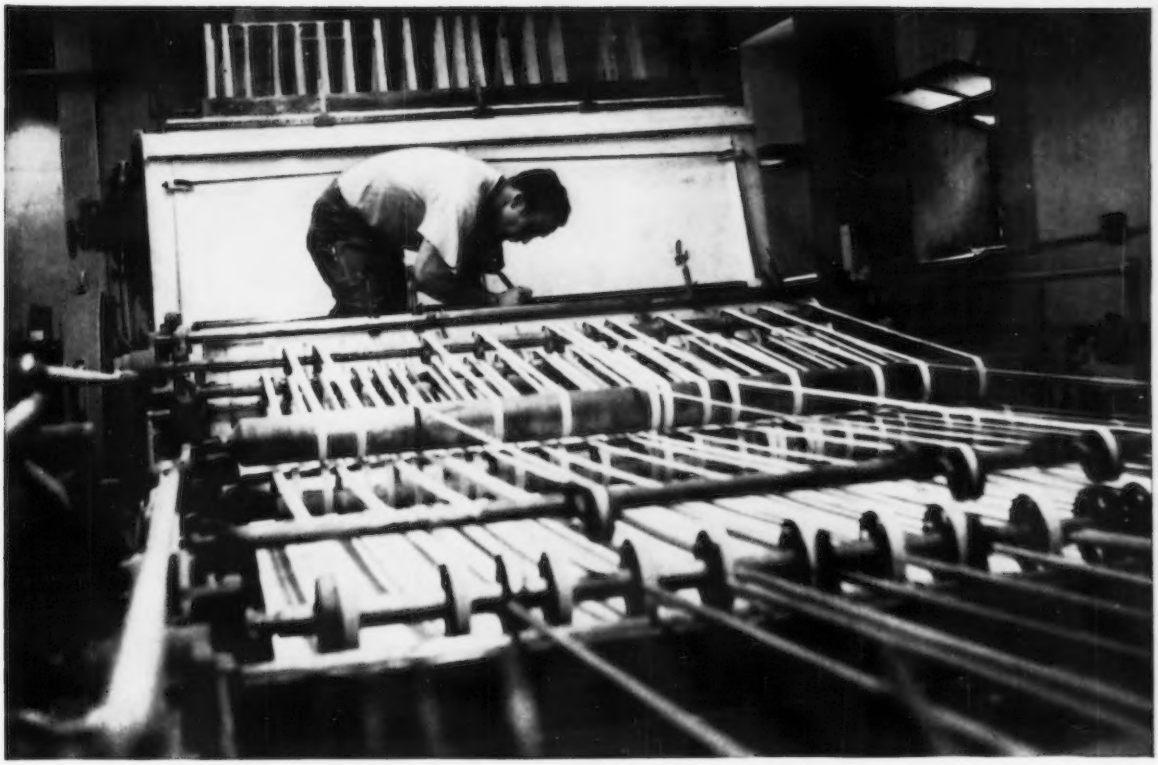

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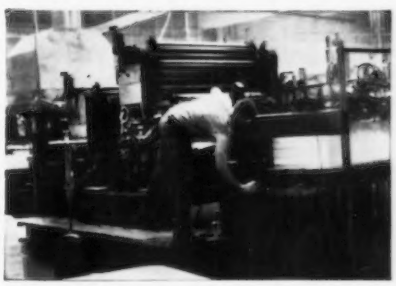

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Weight/gal.	8.43 pounds
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Film properties	Clear and glossy
Adhesion	Excellent
Particle size	900 Angstroms 0.09 Microns

GEN-FLO® 62 styrene-butadiene latex for casein or starch coating formulations

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pH	10 ± 1
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Residual styrene, %	0.05 max.
Brookfield Viscosity, cps	15-25
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- Better pick resistance
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Lbs/gal—Latex	8.45
Specific Gravity—solids	1.02
Lbs/gal—solids	8.51
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